

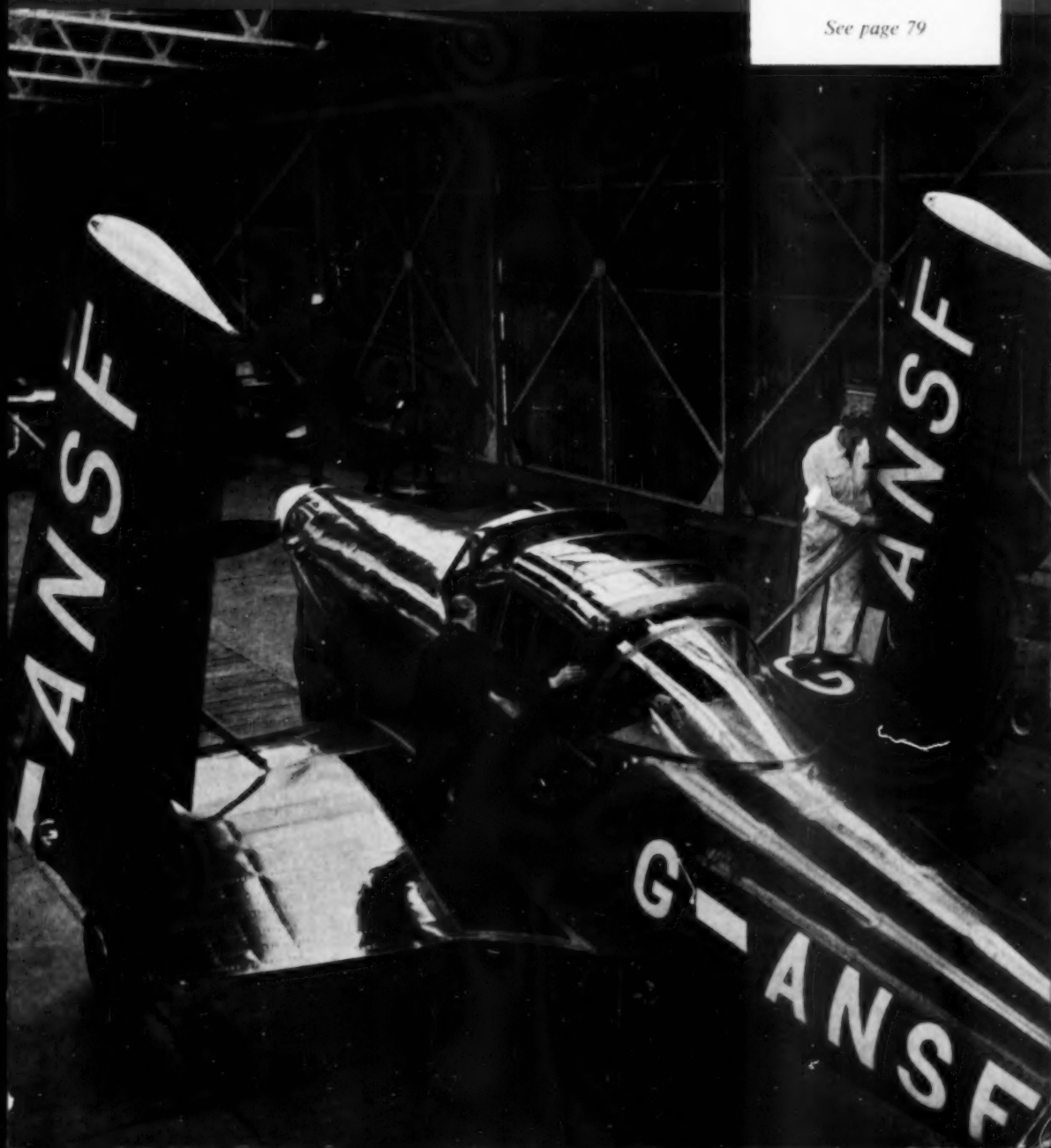
FEBRUARY 1955 2/6

# Business

THE JOURNAL OF MANAGEMENT IN INDUSTRY

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ARE TRAINED  
TODAY

*See page 79*



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FEBRUARY, 1955

## Business

JOURNAL OF MANAGEMENT IN INDUSTRY

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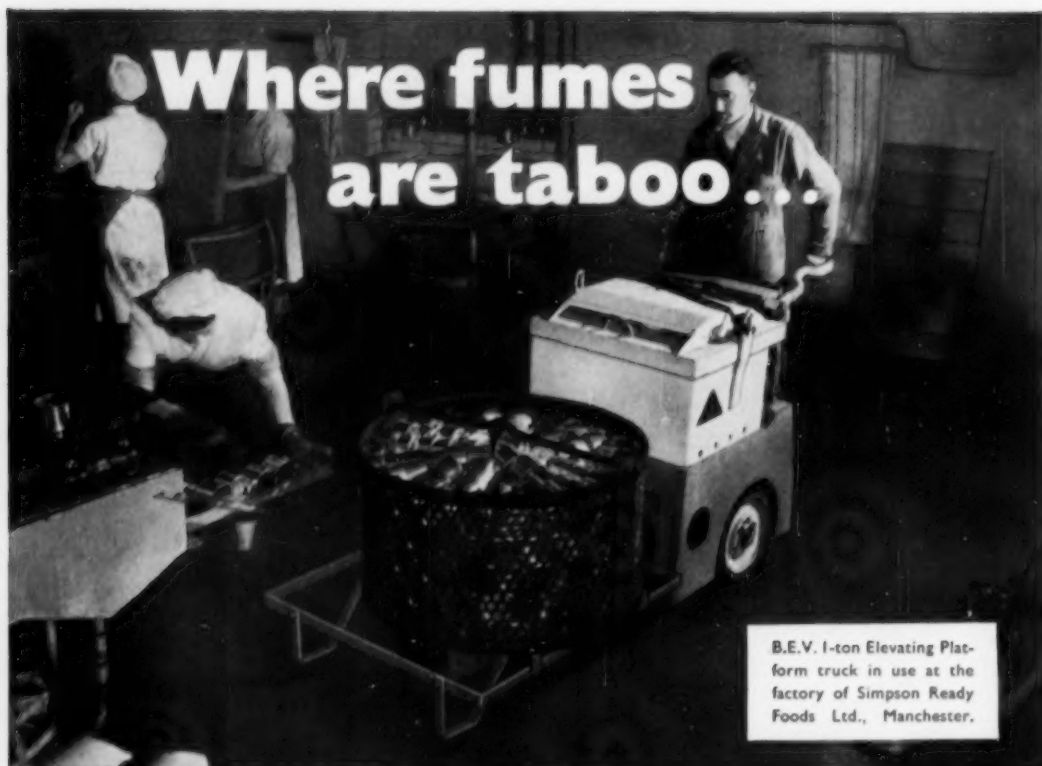
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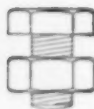
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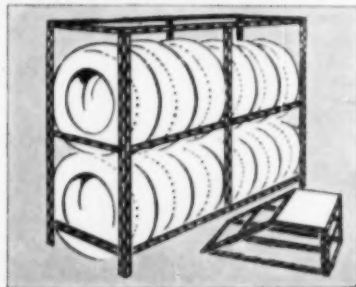
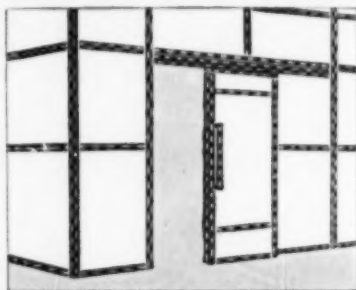
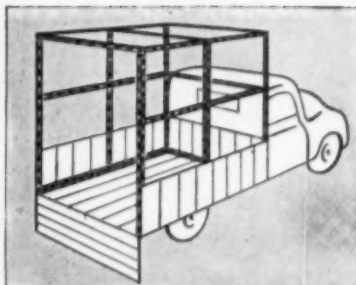


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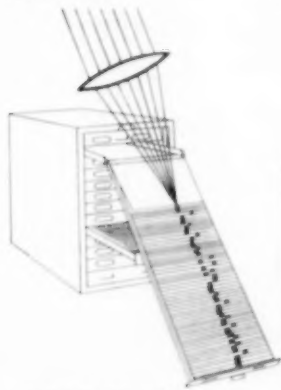
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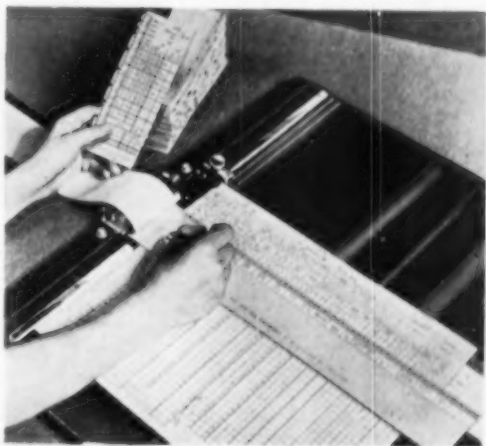
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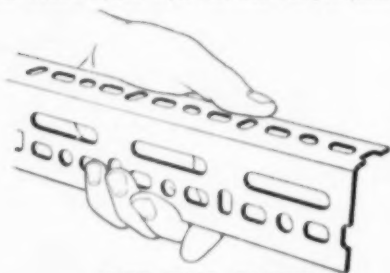
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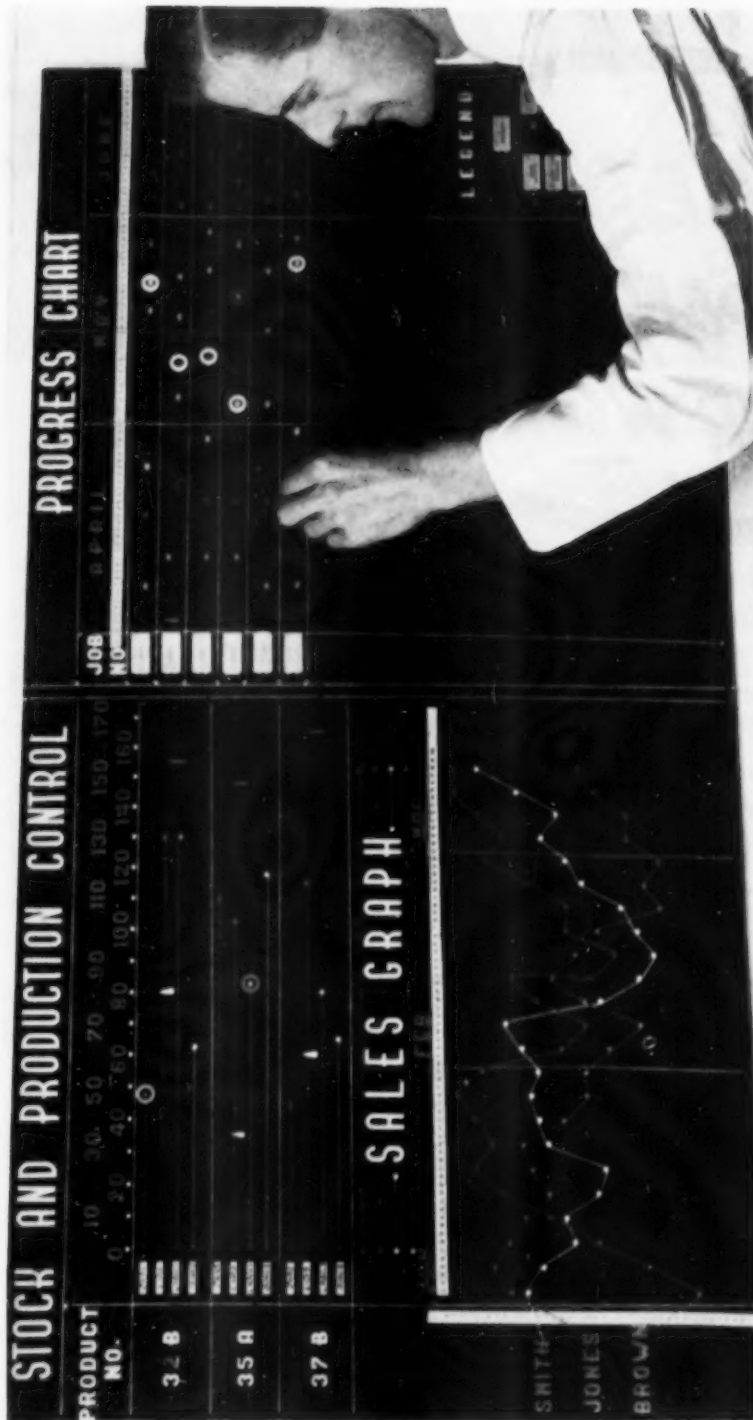
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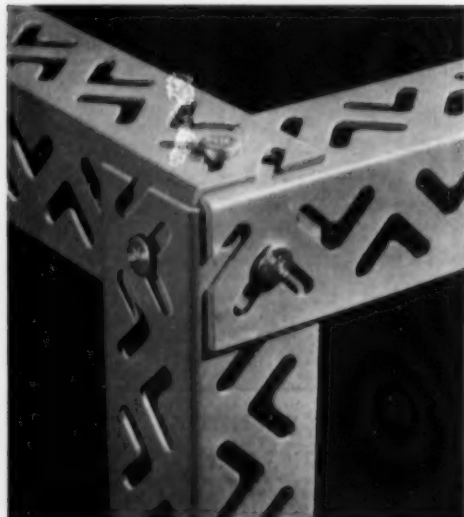
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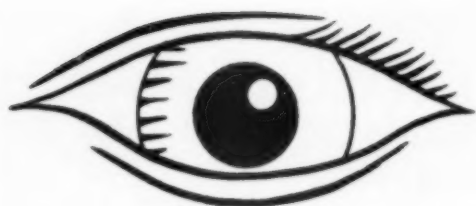
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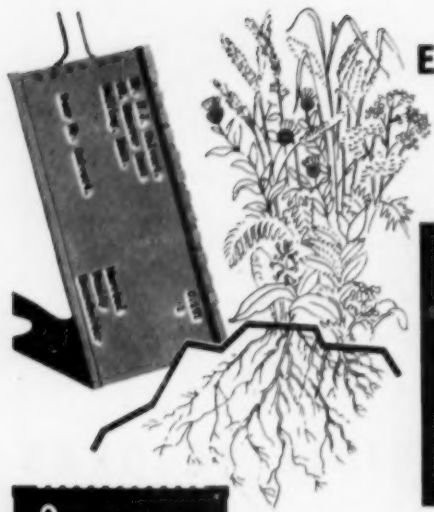
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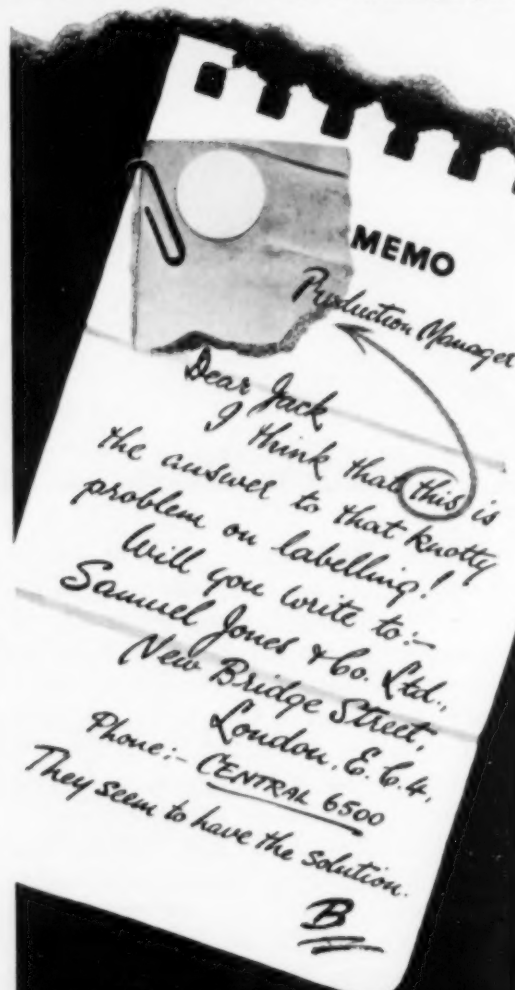
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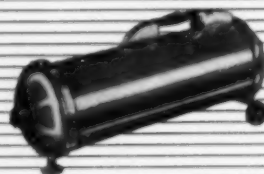
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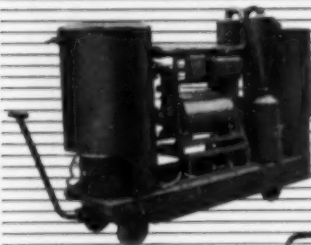
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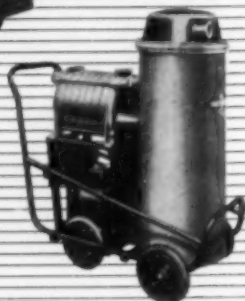
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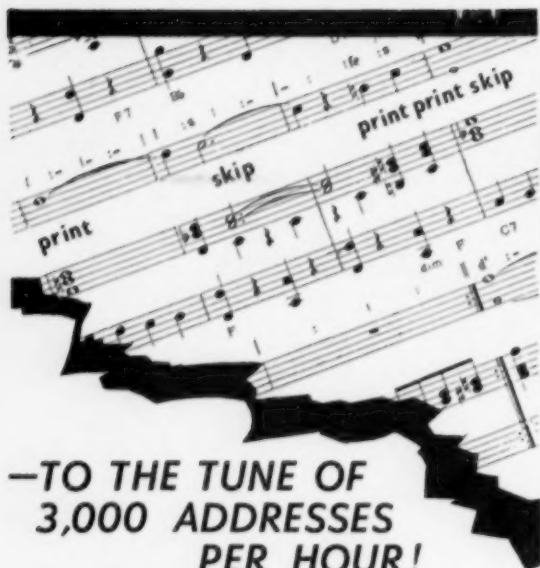
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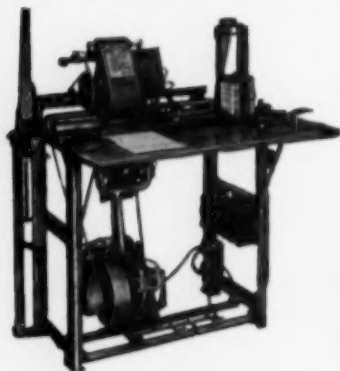




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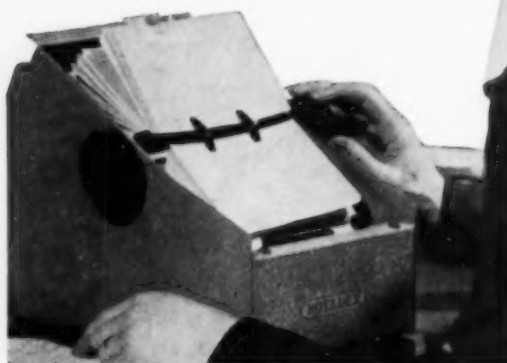
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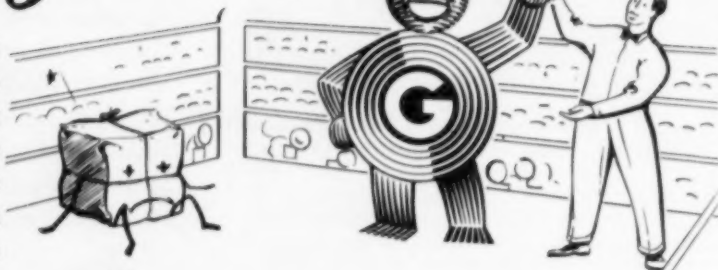
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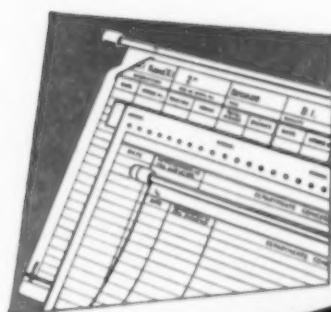


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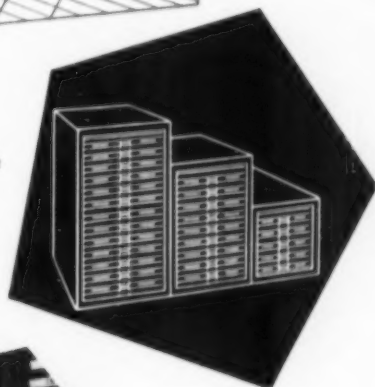
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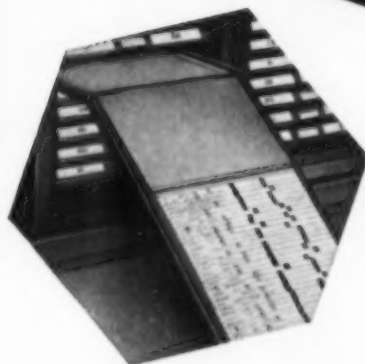


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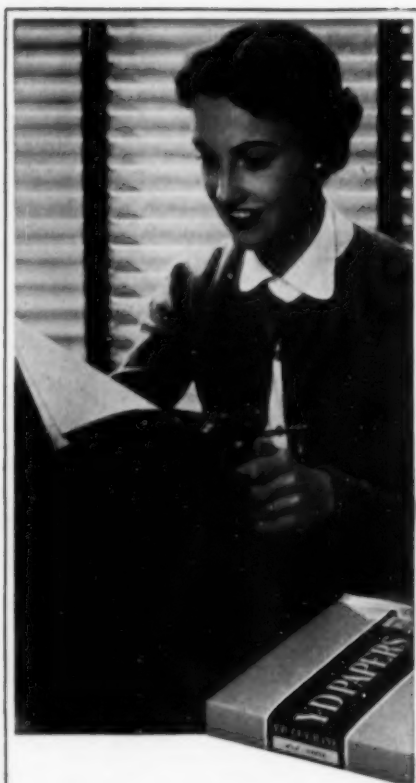
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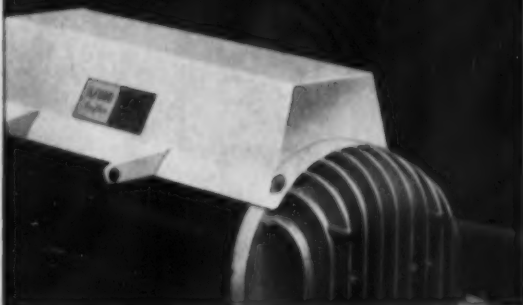
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**important documents**  
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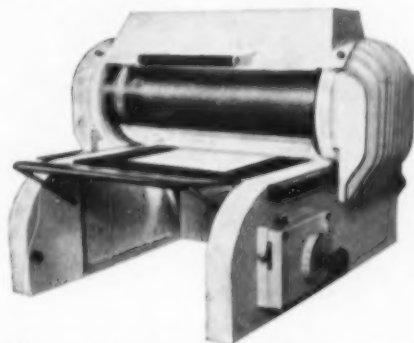
In many business organizations (including Miss Parsley's, of course) document copying has lost all its terrors. No longer does it involve skilled operators, special darkroom accommodation, costly water and drainage services, messy chemicals and long delays—once the only alternative to dependence on outside service. Now, with AZOFLEX, copying has become a quicker, cheaper, cleaner job.

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AZOFLEX is a simple, reliable and up-to-date photo-printing process for making clear, intense, fade-resisting facsimiles of documents of every kind. Unlimited numbers of copies can be produced quickly and cheaply from typed or printed matter and from ink or pencil originals, whether single or double-sided, translucent or opaque. AZOFLEX can be handled easily in any office, it causes no mess or unpleasant smell, and there is a wide choice of machines and materials to suit every requirement.

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Already, AZOFLEX is extensively employed by commercial, industrial and professional organizations, both large and small. Engineering firms use it for drawings, architects for plans, business houses for invoices, librarians for book-copying, lawyers for deeds, and official bodies for records and reports. The usefulness of AZOFLEX is practically unlimited and fresh applications are continually being discovered in every AZOFLEX-equipped office.



The AZOFLEX MODEL K.10 MARK II PRINTING MACHINE, illustrated above, is extremely popular for office use. It will produce direct positive prints from documents of any size up to 10" x 14" and, being able to accommodate bound volumes up to 4 1/2" thick, is ideal for copying pages in books and magazines. The built-in timer clock, for pre-setting and automatically controlling exposure times, is a special feature. Other machines in the AZOFLEX range are designed for continuous outputs of up to 1,400 prints per hour and for handling documents up to 40" wide.

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**ILFORD**

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**PHOTO-PRINTING MACHINES AND MATERIALS**

FEBRUARY, 1955

41

# It's time **YOU DOUBLED** your working 'staff'

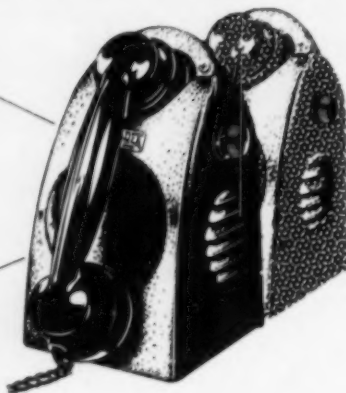
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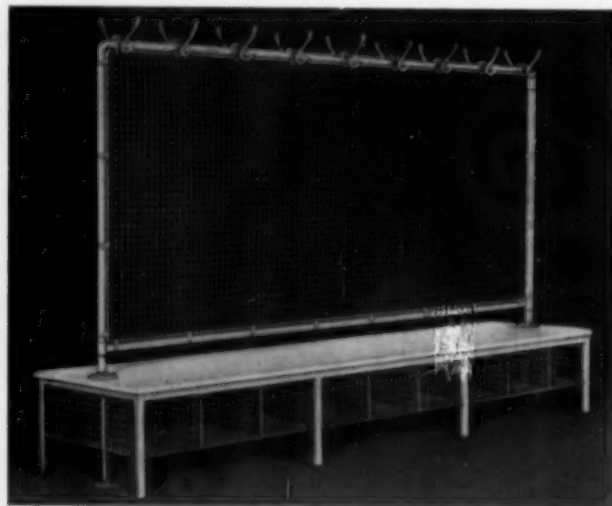


Fig. No. 2616: Also available single-sided for wall positions or base unit alone can be supplied together with hat and coat hooks for wall fixing. For complete range, please ask for List No. BU 879

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**Harvey**



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The  
British Electrical Development Association  
2 Savoy Hill, London, W.C.2.



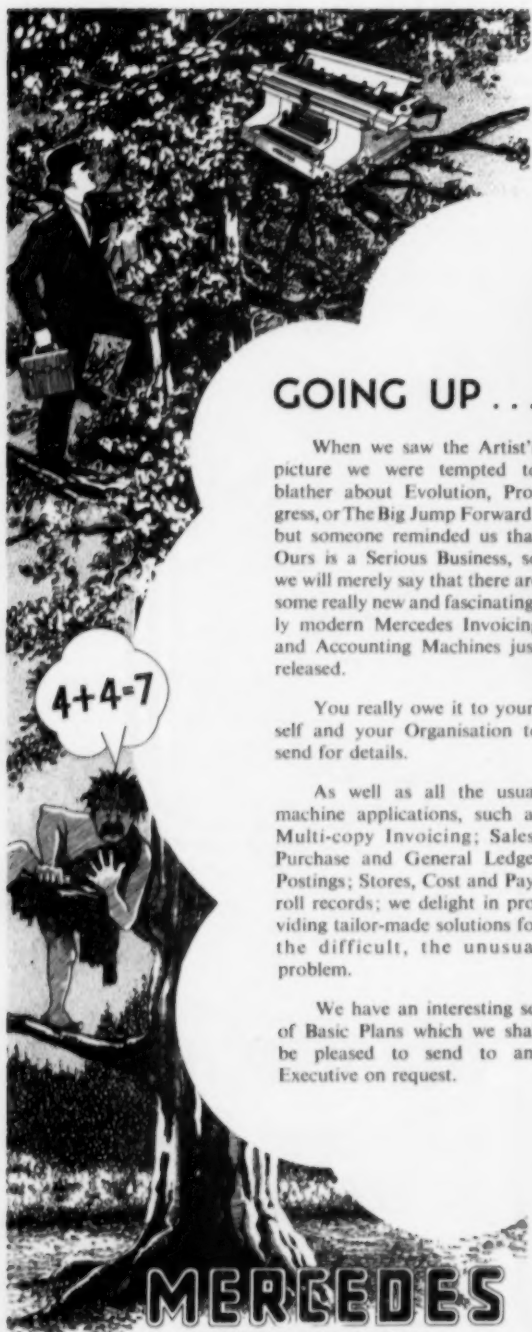
## Don't drill a hole

*How do you measure the plate thickness of a pressure vessel? Drill a hole and hope it is representative? Or use modern methods? The man in the picture is measuring the plate thickness of a pressure storage tank from one side only. The instrument works by ultrasonics and is portable, as you can see, so there is no difficulty in climbing structures with it. What you cannot see is that the thickness is given by a direct reading on one dial. Anything from 1/16 in. to 12 in. in steel. This is*

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higher productivity  
that Electricity can bring you.**

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a Power of Good  
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BUSINESS

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## Easy sliding drawer cabinet!

With supremely accessible, snug fitting, light-weight metal trays in easy-running drawers fitted at convenient heights.

Powers-Samas supply a full  
range of office furniture—  
in metal or wood—  
practical in design and  
worthy of a place  
alongside their machines

## **POWERS-SAMAS**

Powers-Samas Accounting Machines (Sales) Ltd., Powers-Samas House, Holborn Bars, London, E.C.1.

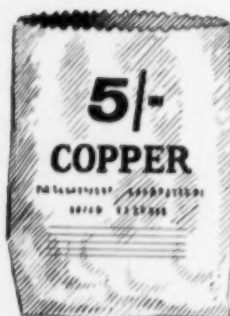
FEBRUARY, 1955

Powers-Samas now provide a complete line of supplies to help punched card installations maintain peak efficiency. All forms of card filing, card storage and card handling equipment are available as well as expertly designed seating and furniture.



## Card trolley

All metal, with three or five tiers. Smooth running on ball bearing castors. Greatly facilitates handling of trays of cards.



*Take care of the pence*

or the "5-minute-men"

will waste your £'s . . . . .



And take care of the minutes too.

It's the "5-minute men" who send costs rocketing—the men who are 5 minutes late.

Cost Accountants compute that with a payroll of 50 men, a loss of 5 minutes each day at 3s. 6d. per hour may mean £177 1s. 8d. a year.

Let the Magneta Time Recorder watch the minutes. It pays for itself in six months.

## MAGNETA TIME RECORDERS

*"Keep an eye on costs"*

THE MAGNETA TIME COMPANY LTD.

GOBLIN WORKS · LEATHERHEAD · SURREY · Telephone: ASHTEAD 866



*"We've got that big  
Australian order, sir!"*

*"That's marvellous, Harbottle.  
How did you do it?"*

## BOLEX Cine Camera

Harbottle's firm makes heavy earth moving equipment that practically sells itself *when buyers see it at work*. But a demonstration in Australia was not easy to arrange.

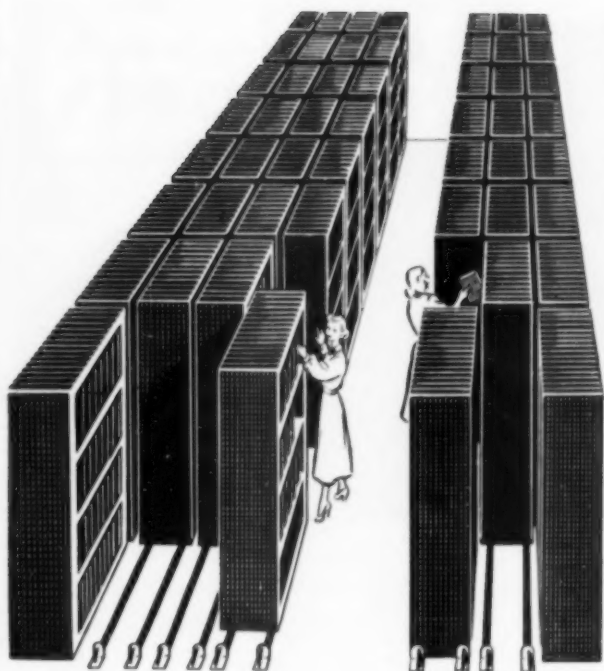
Harbottle hit on the idea of borrowing the Bolex cine camera from the firm's motion study department and taking some first rate moving pictures of one of the machines working on a particularly tough job in Scotland. He flew the film out to his Australian agent and got the order.

Now Harbottle has his own Bolex cine camera and regularly makes sales promotion films showing the firm's machines at work.

*The Swiss Precision Bolex H16 is one of the world's great cine cameras. Please write for information on its many uses in industry.*

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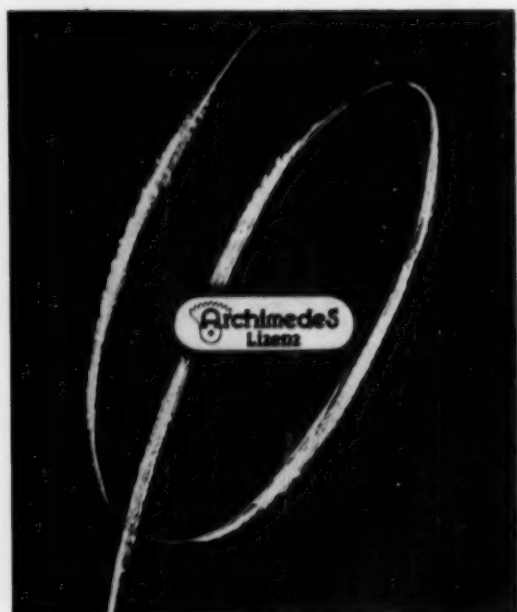
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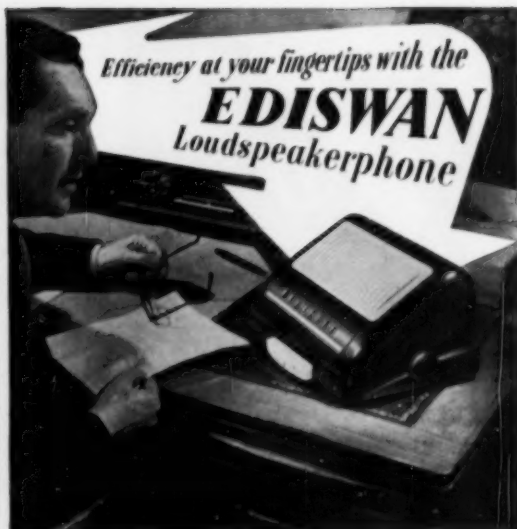
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Extension Units (each) **£4 . 5 . 0**

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*No purchase tax · No rentals*

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*Member of the A.E.I. Group of Companies*



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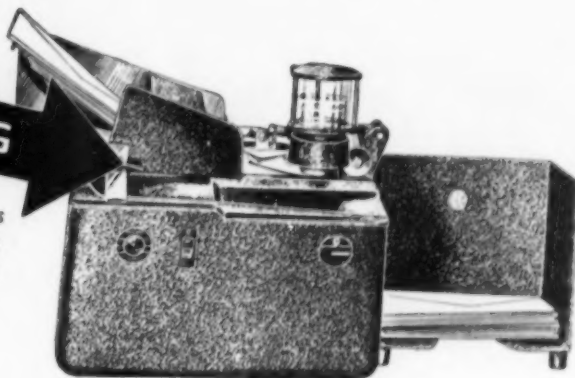
## ... OPENING

Get the day's work away to a prompt start! With this ICC machine, the youngest junior can zip open even a big incoming post in a moment or two. Feed is automatic; complete safety for operator and letter-contents. The cutters are self-sharpening, giving trouble-free service for years. Electric or hand-operated models are available. Size of machine:  $12\frac{1}{2} \times 10\frac{1}{2} \times 9$  ins.



## ... SEALING

No more laborious lick-and-stick! This ICC machine seals the biggest post cleanly, safely, silently, in next to no time. Automatic feed, handling envelopes of most sizes, most thicknesses. There are hand-operated and electrically-driven models and no skill is needed to work either. Size  $20 \times 11 \times 13$  ins.



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KEE KLAMP**  
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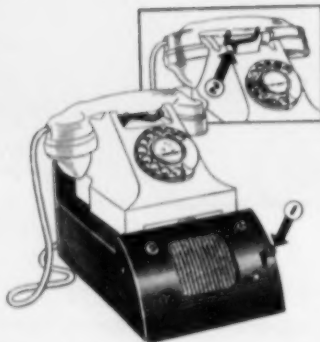
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Simple to Install  
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**THE BRITISH ROTOTHERM CO. LTD.**  
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**BUSINESS**

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In Wool Exchanges, auctions of the wool 'clip' are carried on in an atmosphere of constant excitement and ejaculation, and the broker has to be for ever alert to keep pace with the speed of proceedings.

... acting for many clients—some of whom may be outside the Australian continent—he must have business systems which operate quickly and efficiently. For this reason most brokers, such as the Sydney firm of Dalgety & Co. use Kalamazoo methods. Graziers' and sheep-farmers' records too are Kalamazoo as a rule. Throughout the industry it is Kalamazoo for sheer simplicity.



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*serves Industry, Commerce and Public Administration*

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# PROSPECT

survey and forecast of business conditions

## Butler and the Boom

London, January 21, 1955

### THE MONTH'S HIGHLIGHTS AND TRENDS

#### Management Training

The first article in a new BUSINESS series about *The Executive Himself* appears on page 79. It presents case histories of management training schemes.

● The main economic problem which industrialists must now face is not whether 1955 will be a boom year. For the reasons given here last month, that seems assured. The real problem for industry is whether the Chancellor of the Exchequer will have to take any steps to rein in the boom. And if so, what effects will they have on business?

● This is not just a question of waiting for the Budget. The Bank Rate can be changed any Thursday, affecting the cost of raising money. And even without a change in Bank Rate, the authorities can influence money market rates by allowing the Treasury bill rate to rise. This has recently happened. Moreover, through the Capital Issues Committee, through control over the "queue" for gilt-edged borrowing, and through direct departmental control over spending, the Chancellor can influence business activity at any time. All this in addition to direct control over imports.

● The decision of member countries of the Organization for European Economic Co-operation to increase the proportion of minimum quota-free imports from 75 to 90 per cent by September 30 next is a courageous one, but it could be reversed in a hurry if trade conditions changed. And although British exports are on the whole standing up well, the balance of payments may not be so satisfactory in 1955 as it was in 1954.

● If the boom gets out of hand, its most telling effect will be on the balance of payments. There are three economic indicators which should be watched, to judge the state of overseas trade. First, the actual levels of exports and imports. Second, the relation of export prices to import prices—or the "terms of trade"—and third, the U.K. Chamber of Shipping's tramp freight index.

● During 1954 the monthly average level of exports was £222.8 million, or only a little higher than the level of £215.2 million the previous year. What is more, exports had remained around £215 million for three years before rising a mere £7½ million in 1954. Imports in 1954 were an average of £281.9 million per month, or slightly higher than the level of £278.6 million in 1953. Previously, however, there had been a drop of from £325.2 million per month in 1951 to £289.8 million in 1952, due to import cuts.

● A feature of these figures is the remarkable steadiness of exports and, since the 1951 cuts, the steadiness of imports too. But if the boom in Britain develops into inflation, imports will rise while exports will not—they may even drop.

● Moreover, it is no good saying that Britain will be all right provided we have less inflation than the rest of the world. For during world inflation raw commodity prices tend to rise faster than the prices of manufactured goods. Between December 1953 and December 1954, the price index of British imports rose 3 points, while the price index of British exports remained stationary. In other words, the terms of trade moved 3 points against us. In the same period *The Financial Times* index of Sensitive World Commodity Prices moved up from 86 to 91.

*continued on following page*



## THE MONTH'S HIGHLIGHTS AND TRENDS (continued)

● One of the most sensitive of all measures of the way world trade is moving is given by the index of tramp shipping freight rates. This showed a gain of 60 per cent during the course of 1954, after being relatively stable during 1953. Tramp rates fluctuate violently and quickly with shifts in the demand for sea carriage, and moreover, shippers have to plan months ahead for long across-the-world voyages. The rapid rise in freight rates is mildly reminiscent of the 1950-51 inflation, during which world trade rose in volume, commodity prices rose, the terms of trade moved against Britain, our imports rose faster than our exports and we had balance of payments trouble.

● In another respect, the period which lies ahead of Mr. Butler is similar to that which faced Mr. Gaitskell in 1951. There may be a general election this year, which means that, like Mr. Gaitskell, Mr. Butler must try to be popular at a time when he may need to be firm.

● But there is a big difference in the way in which the two Chancellors would treat an unfavourable balance-of payments. Mr. Butler uses Bank Rate, Mr. Gaitskell relied heavily on physical controls, many of which have since been dismantled.

● Having already given large pension increases, there is not a lot of scope left for Mr. Butler to be "popular" in his Budget. Purchase tax reductions would be popular, but businessmen must bear in mind that if the balance of payments becomes unfavourable, hire purchase restrictions might have to be re-imposed to damp down spending.

● The Chancellor has to take an entirely different attitude towards capital expenditure by private industry, from that adopted towards expenditure by the nationalized industries and public authorities. It takes time to stimulate private capital expenditure, and plans cannot be laid on again in five minutes after a spate of discouragement.

● Therefore it is unlikely that the Chancellor would reverse the encouragement given to private industrial investment in the last Budget, and he may even give more incentives this year. But he would keep in mind that he could quickly, if need be, cut public capital expenditure. A favourite way of doing this is to tell a department or authority that they can still spend the same amount, as planned, but they must spread it over a longer period.

● The chief sufferers, then, this year from any need to check the balance of payments position will be those whose short-term credit position is tight, those who are dependent on imported but non-essential raw materials, those who depend largely on public authority or nationalized industry contracts, and those who sell on hire purchase, in that order.

● It is instructive to compare the performance and prospects of British industry with those of German. In 1954 German industrial output rose by 12 per cent, British by 5 per cent. German wages rose by 8½ per cent, British by 5 per cent. Both economies are working at full stretch, but the Germans had an excess of exports over imports last year of £238 million. The British trade deficit of £608 million was made up by the "invisible" earnings of shipping, overseas investments, oil companies, etc. If inflation threatens Germany, the Minister for Economic Affairs intends to reduce tariffs and encourage more imports. By contrast, the British Chancellor of the Exchequer may have to reduce imports and encourage exports.

● Although this comparison is unfavourable to Britain, some German goods, including textiles, are non-competitive on price, and German trade union demands have lately tended to be even more virulent than British.



## SALIENT FIGURES OF THE MONTH

**Production index for October (8)** was 135, or 4 points above September's and 4 points above the level a year earlier. Provisional figure for November is 136.7, which compares with 133 for the same month a year earlier.

**Value of exports (22)** in December was £255.7 million, or £59.2 million above the November level and £31.1 million higher than in December, 1953. Imports in December last (20) were valued at £314.5 million, or £19.3 million down on the November figure and £33 million up on December, 1953.

**Registered unemployed in December (7)** fell by 7,000 to 256,000. This is 66,000 below the level a year earlier. Total employment in manufacturing industry rose by a further 39,000 to 9,234,000—279,000 more than in December, 1953. Employment in the distributive trades rose by 46,000 to 2,792,000, which is 54,000 higher than a year earlier. The number of miners on the colliery books remained unchanged at 704,000, or 1,000 less than in December, 1953.

**Retail sales index in November (25)** was 141, or 10 points above October and 9 points above the level a year earlier.

**Weekly wage index in November (31)** was 144, or 1 point higher than in October and 7 points above the level in November, 1953. Retail price index remained unchanged in December at 145, which is 5 points above the level a year earlier.

### 'BUSINESS' INDICES

1. Production (12-month moving average) 1948=100	* 126.6		
2. Purchasing Power ... (do.)	* 108.0		

### MANPOWER

3. Total manufacturing industries (thousands)	9,234		
4. Textiles ... (do.)	1,004		
5. Distributive trades ... (do.)	2,792		
6. Coal (on colliery books) ... (do.)	704		
7. Registered unemployed (G.B.) (do.)	† 256		

### PRODUCTION

8. Index of prodn.: total, all inds. 1948=100	* 135	+ 4	+ 4
9. Coal (average weekly output) (thousand tons)	4,591	— 11	— 100
10. Gas available at gasworks (average weekly output) ... (million therms)	59.4	+ 7.7	+ 2.4
11. Electricity generated ... (million kWh)	6,984	+ 743	+ 885
12. Steel ingots and castings (average weekly output) ... (thousand tons)	† 355	— 22	+ 16
13. Cotton yarn ... (million lb.)	17.64	+ 0.14	+ 0.69
14. Rayon yarn and staple fibre ... (do.)	37.99	— 1.89	+ 1.86
15. Worsted yarn ... (do.)	* 20.46	+ 0.15	— 0.86
16. Sulphuric acid ... (thousand tons)	* 169.4	+ 3.9	+ 6.3
17. Passenger cars (average weekly, thousands)	15.8	— 0.4	+ 2.4
18. Commercial vehicles ... (do.)	6.2	+ 0.3	+ 0.9
19. Permanent houses completed (thousands)	30.05	— 1.88	+ 0.07

### TRADE

20. Value of imports ... (£m)	† 314.5	— 19.3	+ 33.0
21. Value of imports, Dollar Area ... (£m)	* 53.1	— 3.6	— 2.3
22. Value of exports ... (£m)	† 255.7	+ 59.2	+ 31.1
23. Value of exports, Dollar Area ... (£m)	† 34.0	+ 6.7	+ 1.4
24. Freight train traffic ... (thousand tons)	† 5.79	+ 0.14	— 0.16
25. Retail sale index ... 1950=100	141	+ 10	+ 9

### FINANCE

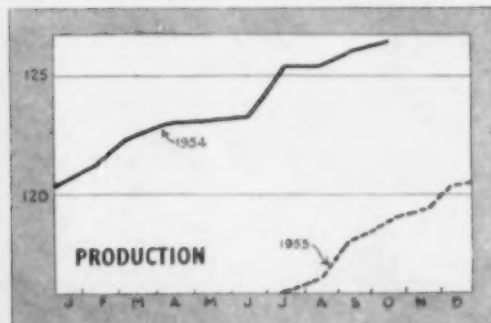
26. Currency in circulation ... (£m)	1,576	+ 7	+ 93
27. Deposits, London clearing banks ... (£m)	6,684	+ 75	+ 265
28. Provincial cheque clearings ... (£,000)	784	+ 34	+ 68
29. National savings, total outstanding ... (£m)	* 6,039	+ 20	+ 53
30. Gold and dollar reserves ... (do.)	† 988	— 56	+ 87

### WAGES AND PRICES

31. Weekly wage rates ... 1947=100	144	+ 1	+ 7
32. Retail prices ... (do.)	† 145	Same	+ 5
33. Price indices of materials used in:			
Non-food mfg. industry ... 1949=100	† 146.4	+ 2.3	+ 4.7
Mechanical engineering ... (do.)	† 155.7	+ 1.3	+ 8.1
Electrical machinery ... (do.)	† 168.3	+ 1.4	+ 11.0
Building and civil engineering ... (do.)	† 133.5	+ 0.4	+ 3.5
34. Import prices ... 1952=100	† 101	+ 1	+ 3
35. Export prices ... (do.)	† 99	Same	Same

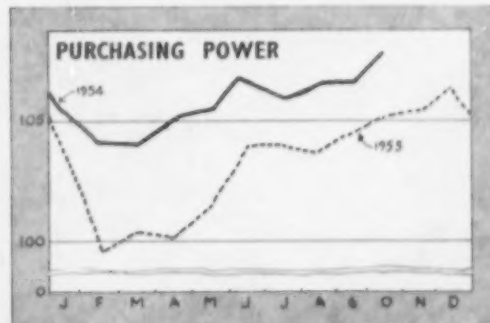
\*October †December ‡Four weeks to November 7th, 1954. All other figures refer to November.

## 'BUSINESS' INDICES (1948=100)



A twelve-month moving average of the Official Index of Industrial Production (Total: All Industries).

FEBRUARY, 1955



An unweighted index of currency in circulation with the public, total bank deposits, and total outstanding national savings.

## **Specialised design**



A little exotic, perhaps, but designed to suit the client rather than the manufacturer's production line.

In pension matters too, a Board has the choice (at the same cost) between a mass-produced pension scheme and an individually-designed plan based exactly upon the needs and policy of the Company.

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# HOME MARKET

## Regional Surveys

### Yorkshire

**I**NDUSTRIES in the Region continue in general to be very busy and there is nothing to indicate that any important change in the position is likely. There are over 30,000 vacancies for workers, and 25 per cent more industrial development certificates are being issued than a year ago. Demand for engineering products is world-wide and machine tool makers have full order books. The Sheffield and district steel industry continues to break output records.

Woodworking tools, micrometers and other precision tools and instruments are in brisk demand both at home and abroad. Although conditions vary in the cutlery and silverware industry, the call for table cutlery is strong and some manufacturers have particularly satisfactory export order books. Business in silverware remains fairly steady. Makers of glass containers, who continue to complain of shortage of labour, have been greatly improving their shipments overseas recently and, to maintain their position, firms are giving consideration to how they may obtain greater productivity from improved machinery. Some tanneries are concerned because, although the price of their raw materials has fallen, profit margins have fallen in greater proportion.

Demand for workers in the woollen and worsted industries continues to be substantial and there are currently nearly 4,000 vacancies despite placings at the rate of some 1,300 a month. A slight increase is reported in the recruitment of women and girls who travel each day from South Yorkshire to work in textiles: the total is around 3,600. Additionally, about 1,000 women and girls work in burling and mending establishments in non-textile areas.

Some concern is felt in the wool industry. Following the U.K. dock strike, when there was some short-time working in the combing section, came the dock strike in Australia whose effect is likely to be felt in the coming months when supplies would normally be arriving. This has created

a larger demand for South American and South African wools, and may lead to bigger working stocks being held. In the wool textile industry generally the rate of consumption has fallen by about 5 per cent compared with a year ago, but order books are fairly well filled. As a result of the increased programme of house building, the erection of public buildings and hire purchase relaxations, there is a widely-growing demand for carpets, and Halifax firms are very busy.

An analysis of the annual reports issued by certain public companies operating in the region during the period June-September 1954, inclusive, shows that four-sevenths of them made larger profits than in the previous year; more than one-half increased their dividends, while fewer than one-eighth reduced them. Almost two-thirds of the companies with smaller profits were in the engineering, forging and tools group of industries. Over two-thirds of the companies in the textile and clothing industries made increased profits.

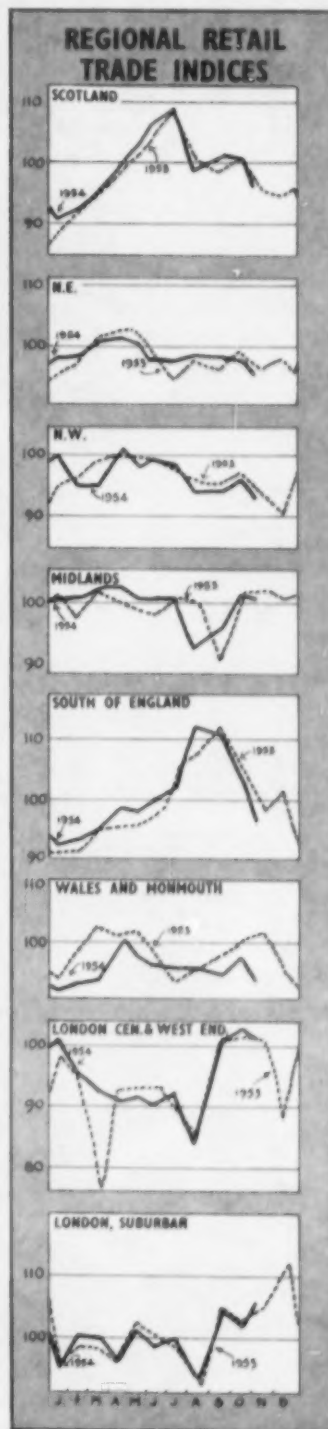
So far, nearly 800 Yorkshire firms have responded to the Minister of State's export campaign by asking for further information. Of these 100 requested assistance from the Board of Trade in appointing agents overseas, involving nearly 500 new agencies. Some 50 companies asked for details about the status of agents they were themselves appointing, and 22 firms have been supplied with lists of overseas importers.

Industrialists are closely examining the possibilities of setting up branch factories in South Kirkby where there is available a large labour force of women, and one concern may set up a clothing factory to employ, eventually, 180 workpeople. Since the war

Continued on page 61

### What the Charts Show ➤

Indices in the charts show retail turnover in each region in non-food merchandise as a percentage of national average (=100) for the month. They are based on Board of Trade retail sales indices.

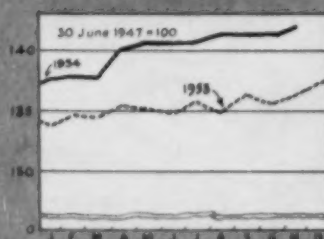


# STATE OF THE NATION

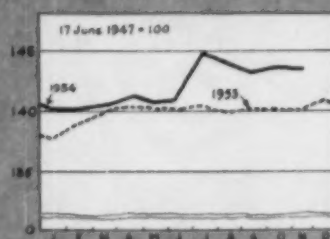
From this comprehensive series of charts, covering the main economic factors affecting the state of the nation, the businessman may gain a perspective of the situation governing his operations.

## WAGES AND PRICES

### WEEKLY WAGE RATES

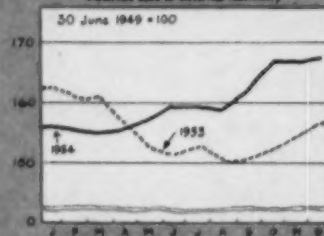


### RETAIL PRICES



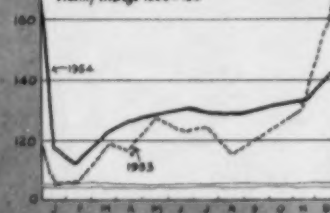
### WHOLESALE PRICES

Materials used in electrical machinery



### RETAIL TRADE

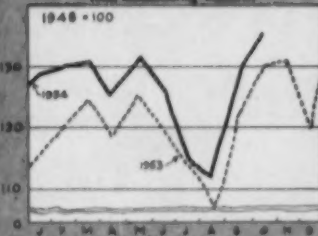
Vicinity Average 1950 = 100



## PRODUCTION

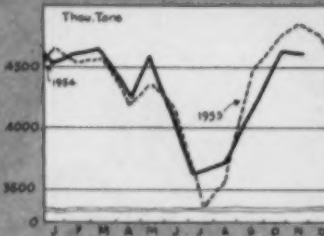
### INDUSTRIAL PRODUCTION

Total manufacturing industries



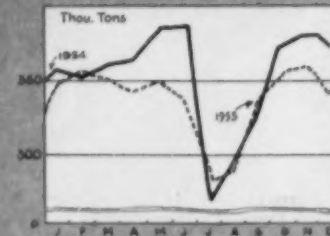
### COAL

Thou. Tons



### STEEL INGOTS & CASTINGS

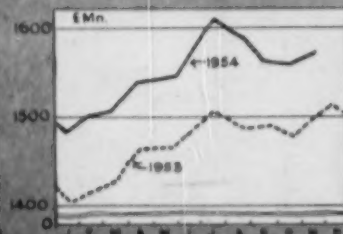
Thou. Tons



## FINANCE

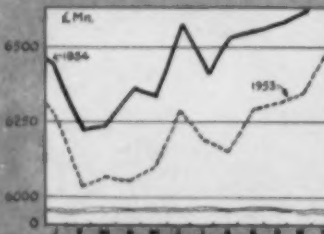
### CURRENCY CIRCULATION

£ Mn.



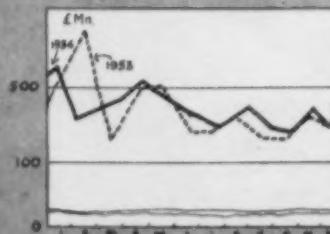
### BANK DEPOSITS

£ Mn.



### GOVERNMENT REVENUE

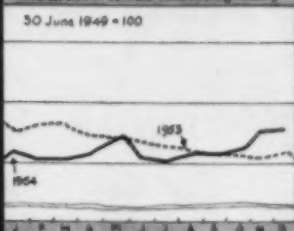
£ Mn.



### WHOLESALE PRICES

Materials used in non-ferrous manufacturing industry

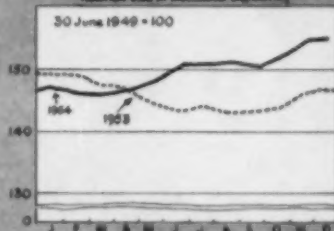
30 June 1949 = 100



### WHOLESALE PRICES

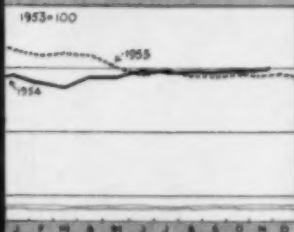
Materials used in mechanical engineering

30 June 1949 = 100



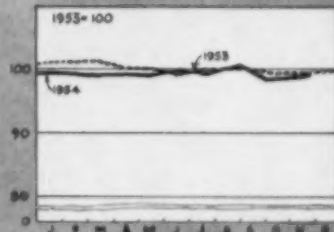
### IMPORT PRICES

1953 = 100



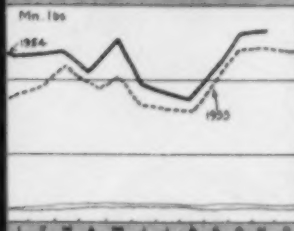
### EXPORT PRICES

1953 = 100



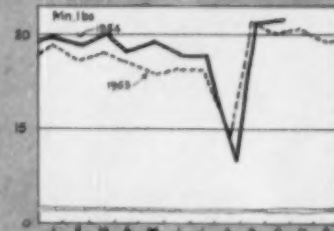
### COTTON YARN

Min. 195



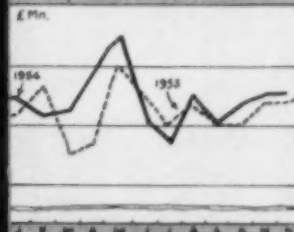
### WORSTED YARN

Min. 195



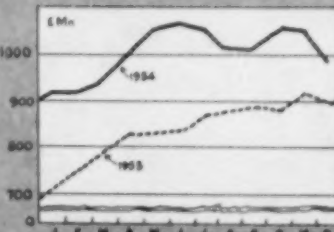
### GOVERNMENT EXPENDITURE

£ Mln.



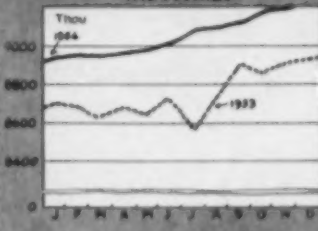
### GOLD & DOLLAR RESERVES

£ Mln.



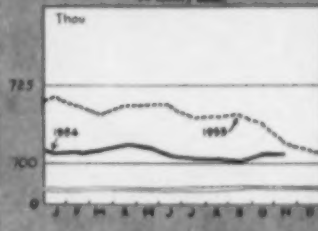
### LABOUR

#### TOTAL MANUFACTURING INDUSTRIES

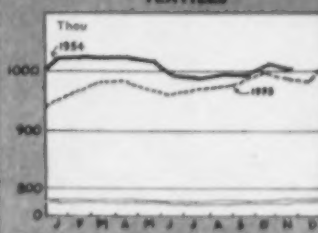


#### COAL

On colliery basis

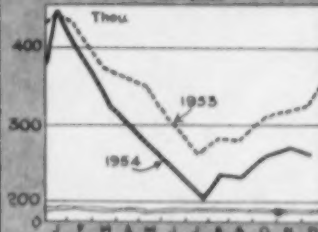


#### TEXTILES

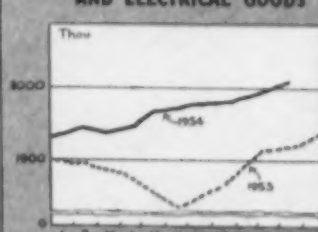


#### REGISTERED UNEMPLOYED

Great Britain



#### ENGINEERING SHIPBUILDING AND ELECTRICAL GOODS





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## HOME MARKET REGIONAL SURVEYS (cont. from page 57)

five plants making a variety of articles, including hosiery and rainwear, have been established there, and the Hems-worth Rural Council, which is responsible for financing its own industrial development project, has already bought sites extending up to 100 acres and may increase this to 250.



Sheffield's **steel expansion plans** continue. Samuel Fox and Co. have opened at their Stocksbridge Works a new melting shop housing a 60-ton electric arc furnace for the melting of alloy and special steels; it is the largest of its kind in Europe. Expected to produce over 1,000 ingot tons a week, it will double the available electric melting capacity. The new furnace will be occupied with the production of types of steel with a relatively low alloy content, most of which will find its way as semi-finished steel to the re-rolling, drop-stamping and tube-making industries. Two new **machine shops** and a modernized heat-treatment division are nearing completion at the Hecla Works, Attercliffe, of Hadfields Ltd. Already part of the plant, which will produce mill rolls for the ferrous and non-ferrous rolling mills, is in production, and the remainder is expected to be working by March.

Some 500 acres, formerly the site of Tinsley Park Colliery, have been acquired by the English Steel Corporation for further expansion. The company, Sheffield's largest steel and engineering concern, already employ over 10,000 local people in their various works, occupying about 150 acres. They were returned to private enterprise by the Iron and Steel Holding and Realization Agency last year. In addition to the new site, the company are to build a new **machine shop** of 150,000 sq. ft. alongside Brightside Lane. Steel, Peech and Tozer, the Rotherham branch of United Steel Companies, Sheffield, are to start work soon on a new £3 million **rolling mill**. Capable of rolling 6,000-7,000 tons of hot-rolled strip steel a week, it will take about 2½ years to build and will employ about 200.

Extensions costing £120,000 have been made to the Rutland Road, Sheffield, factory of Stanley Works (Great Britain) Ltd., to enable production of **steel wood planes** and other hand tools to be increased and new

lines to be introduced. One of the country's largest exporters of **table cutlery** to America, Westall Richardson Ltd., Sheffield, are to build a new two-storey works costing £35,000 in Upper Allen Street. This will enable the firm to take on more workers, increase output and streamline production methods. The upper storey will not be a complete floor but a balcony which will run all round the walls, enabling executives to step out of their offices and see all processes at a glance.

Samuel Osborn and Co., Sheffield, have set aside £150,000 for research and improvements to their plant. On order is a £20,000 **experimental rolling mill** which will shortly be installed and will be used largely for the production of better stainless steels.

New premises for research and development are to be opened by Higher Speed Metals Ltd. because of increasing demand for **tungsten carbide alloys** in the tool industry. Also Edgar Allen and Co's magnet department is being equipped with new plant.

Millspaugh Ltd., Sheffield, whose new centrifugal foundry is the biggest in the world and is capable of producing the largest rolls for paper-making machinery, are now working on contracts for paper-making plant valued at £500,000, including one for Canada for over \$800,000. Davy and United Engineering Co. are building for Dorman Long Britain's biggest **steel blooming mill** at a cost of nearly £1 million. When in full production at the firm's new Lackenby Works, Middlesbrough, by January 1957, it will have a weekly output of 15,000 tons of steel, rolling ingots weighing 4.5-20 tons.



To aid developments which will increase the number of students in the technical field, the Government are to give Leeds University a substantial **recurrent grant**. The number of graduates in technology, physics and chemistry is to be stepped-up with a view to multiplying the total of qualified men available for industry.

In the Leeds development plan, which covers the period to 1971, **light industrial estates** are being provided at Kirkstall Road, Domestic Street and Meanwood and on suburban sites at Seacroft and Ireland Wood. A feature may be the building of **multi-storey**

**flatted factories** which could accommodate a number of small light industries with hoists to transport material to the various floors.

Mr. Alfred H. Catton, vice-chairman of the Leeds Association of Engineers, has suggested that more sites in the City should be allocated for the **development of heavy industry**. A new 4-storey **office block** in Eastgate, Leeds, will when completed house a new north-east divisional headquarters of Shell-Mex and BP Ltd. covering Yorkshire, Lincolnshire and parts of Derbyshire and Nottingham.

Because they consider that producer gas is the most efficient for their purpose, Leeds Fireclay Co. are to install at their Farnley Works a new central **producer gas plant** of sufficient capacity to supply the tunnel kilns, both erected and projected, and also the intermittent kilns. This will be in use by 1956. A new **research laboratory** for the firm should be in operation by this summer. An **engine test house**, claimed to be among the most advanced in the country both in layout and equipment, has recently been put into operation by David Brown Tractors (Engineering) Ltd. at their Farnley Works near Leeds. No fewer than five fuels are laid on direct to the test beds.



Bradford, whose **smokeless zone order** comes into operation officially in April, already claims the distinction of having the largest smokeless acreage in the country. A Bradford concern, Leathers Chemical Co., have had their **appeal** allowed by the Ministry of Housing against conditions imposed by Bradford Corporation in respect of their proposed extensions. These are to cost £35,000 but the removal of the plant to an industrial zone at Low Moor (as suggested by the Corporation) would cost £600,000. Precautions must be taken by the firm to minimize nuisance from fine oxide dust.

Development and manufacture of **electrical equipment** for aircraft is to be gradually expanded at the Thornbury, Bradford, works of English Electric.

Component makers are busy executing orders for the vehicle industry. One firm, Armstrong Shock Absorbers, are operating their York and Beverley factories at full pressure and have now entered the **motor cycle suspension unit** field. Carpet production is to be increased at the new spinning

# PROSPECT

survey and forecast of business conditions

mill near the Dudley Hill headquarters of Associated Weavers, the Bradford manufacturers of carpets and upholstery fabrics. Two Yorkshire firms are working on substantial orders received from Russia.

Spencer Wire Co., Wakefield, are supplying 5,000 tons of copper wire at a cost of £1 million, and Crompton Parkinson Ltd., Guiseley, are fulfilling a contract for paper-insulated cable and wire to the value of £1.7 million. It is estimated that something like £3 million worth of business was done at the International Toy Fair held at Harrogate from 8-14 January. Products of some 700 individual firms were on show in about 350 stockrooms.

Total capital expenditure in Hull will, over the next 10 years, amount to some £5.5 million, in addition to expenditure so far of £2.5 million. Hull Telephones Committee are to speed up their extension and building programme to hasten the service to new subscribers. Two new exchanges, to be opened this year, will go some way to reducing the waiting list of close on 5,000, and extensions costing £15,000 are to be made to the existing East Hull exchange.

## Northern

**A** record number of people—48,000—are now being employed in Government-sponsored factories on trading estates in the north-east. During the past year there was a net increase of 2,500 in the working total, and the potential employment capacity in factories being built or relet in 1954-55 is some 7,500. Significantly, more than 80 per cent of the new factory space completed in 1954 was for extensions to existing premises, and building has been spread fairly evenly over the 35 estates and sites between Skelton-in-Cleveland and Ashington, Northumberland.

The two new industries that have been making most progress are those concerned with **electrical goods** and **precision engineering**. Shipbuilding yards on the three rivers have enough orders in hand to keep them fully employed for the next two years. Labour and raw material shortages have eased, and the quicker deliveries of steel and the better flow of boiler plates have been reflected in speedier completion of work. But the paucity of new orders is disturbing, and builders may have to offer fixed contract prices to attract new work. The eight shipyards on the Wear now have uncompleted

orders on hand for 70 vessels, valued at some £46 million, but new business has been scarce and the total of cancelled orders during last year was four cargo ships and one tanker. Until January 12, when a contract for a 10,750-ton motor ship was placed by the West Africa Steamship Co. with Bartram and Sons, Sunderland had not received a single fresh foreign order for two years. Layout of both the Austin and Pickersgill yards on the Wear is to be reorganized at a cost of approximately £1.1 million over the next two years, to produce a modern shipbuilding and shiprepairing unit.

The Tees Conservancy Commission are pushing ahead with their plan to build **deep-water docks** at Teesport, near the river mouth, and licences already issued cover civil engineering work to the value of nearly £2 million. Need for the docks is created by the post-war industrial expansion on Teesside and its hinterland.

I.C.I. and Dorman Long have between them guaranteed £3.5 million of the £8.25 million which the Tees Valley Water Board are to spend on capital developments within the next 10 years. The proposed **Selsby reservoir** in Upper Teesdale will hold 2,900 million gal. Also included in the scheme are a service reservoir, a break pressure reservoir, four pumping stations (excluding the new £750,000 works at Broken Scar, Darlington, which should be completed by the spring) and 51 miles of truck mains ranging from 36-in. to 15-in. diameter. These projects have been necessitated by the expansion of local chemical and steel industries.

Progress is being made in the building of the new **civil engineering** section of King's College, Newcastle. A 3-ft. thick, 218-ton concrete floor—the biggest in Britain—has been laid for testing steel beams and structures.

Cleveland Bridge Co., Darlington, have nearly completed the building of structures for the National Coal Board, which will be used in **drilling underneath** off the north-east coast.

The British Electricity Authority plan a new **power station** at Blyth, Northumberland, which when built will be the largest in the north-east.

A lease of the 175,000-sq. ft. factory at Team Valley, Gateshead-on-Tyne, vacated by Durham China Co. has been taken by the Dunlop Rubber Co. Having already completed over £1.25 million worth of building work, they have another £1.35 million worth in hand, besides several other constructional projects. The existing buildings,

which are suited to straight line production methods, will be used initially to meet the growing demand for **India-rubber** and **allied goods**, and when fully equipped the works will employ 600 operatives.

A new factory on the West Chilton industrial estate, North Shields, has been acquired by the Commercial Plastics group: at their main Wallsend-on-Tyne works the installation of new machinery has doubled the productive capacity for **p.v.c. sheeting**. Wilson's Forge (1929) Ltd., Bishop Auckland, have taken over the business of the Heaton Foundry Co., Newcastle. To meet increasing product demand, the St. Helen's, Auckland, factory occupied by Ernest and Henry Ltd., button manufacturers and precision engineers, is being extended.



Marking the completion of the second stage of developments at the South Works of the Power-Gas Corporation Ltd. and at Ashmore, Benson, Pease and Co., Stockton-on-Tees, are recently-completed **extensions** which have increased floor area by 50 per cent. They include additions to the constructional shop and a new machine shop of 32,500 sq. ft. Further schemes during the next six to eight years will bring total development costs up to £2 million. Ashmore, Benson, Pease are currently fulfilling a **contract** for two large blast furnaces, valued at nearly £3 million, placed by the Indian Iron and Steel Co. The Power-Gas Corporation are to build for the Eastern Gas Board a **catalytic oil gas plant** to make ordinary town gas from oil instead of coal. At a cost of several million pounds, I.C.I. are expanding their plant at Billingham for the manufacture of **higher alcohol** by the carbonylation process. This group of products is used in the plastics industry and as solvents, principally in paint production. When completed, the plant will be the largest of its kind in the world, with a potential capacity of 40,000 tons of products a year, worth more than £5 million. At Billingham, too, a new 350-ft. long **sulphuric acid kiln** has come into operation, giving the plant when in full production an annual out-turn of 180,000 tons of acid, made by the anhydrite process. Now being used at the company's anhydrite mine is a new **electric drill equipment** which can be worked by one man from a press button panel.

## EXPORT MARKET SURVEY—India

OWNING 72 per cent of the £240 million of foreign capital invested in business activity in India, Britain naturally has a deep and continuing interest in the sub-continent's economic progress and in its commercial prospects. Although Mr. Nehru, the Prime Minister, may declare, as he did the other day, in one breath that India's goal was a "classless and casteless society according to the socialistic pattern," in the next he was careful to point out that there would be scope in the coming second Five-Year plan for the "private sector." Indeed, that sector is expected to provide nearly half of the total investment of Rs. 50,000 million. Businessmen, too, concerned at the growing nationalization of Indian production, were recently assured by Sir Chintaman Deshmukh, the Finance Minister, that private enterprise had a definite place in the country's development.

That is evidently the view of Mr. A. R. W. Low, Britain's Minister of State, who recently spent some time in India discussing with the Government the various projects on hand and the ways in which British manufacturers could participate in them by supplying plant and equipment.



Some British firms are certainly taking advantage of opportunities that present themselves for co-operation with India. Recently built or building are an oil refinery, a locomotive works, a fertilizer factory and chemical plants. India has accepted the offer of British facilities to set up a steel plant, and a U.K. technical mission will visit India to discuss the scheme. The facilities have been offered by the Metallurgical Equipment Export Group of London, representing Davy and United Engineering, Electric Furnace, Head Wrightson, Joseph Parks and Son, Simon Carves and Wellman Smith Owen Engineering.

In the case of the oil refineries now being established by three overseas concerns, specific official pledges have been given: they will not be nationalized for at least a period of 25 years and the equity capital has been left in the companies' hands.

India's economic climate has been generally improving and the first Five-Year plan has a number of achievements to its credit. The transport

system has been overhauled and records have been set up in goods traffic, with express goods trains now running on all main lines. Plans have been made for an additional 1,300-3,000 miles of railway line to be constructed. To date the Chittatanjan Locomotive Works have turned out 200 steam locos, and in three years' time the country aims to be self-sufficient in this branch. By the autumn, a coach factory in Perambur, S. India, will be producing broad gauge coaches, and by that time manufacture of metre gauge coaches will have started in Bangalore.

Agricultural production has increased and wholesale prices have come down. Business confidence is greater, which will affect investment prospects, and output in the more important industries has been steadily going up, with multi-purpose projects and the irrigation programme beginning to show results. But despite rural schemes that have helped to produce jobs, a disturbing situation exists in urban districts, where there are an estimated 10 million unemployed. India has a population of 364 million, which is increasing at the rate of 4 million each year. In the next 10 years the Government propose to provide industrial employment for 24 million—virtually full employment—but this would require an annual investment rate of Rs. 10,000 million, or 10 per cent of the national income.

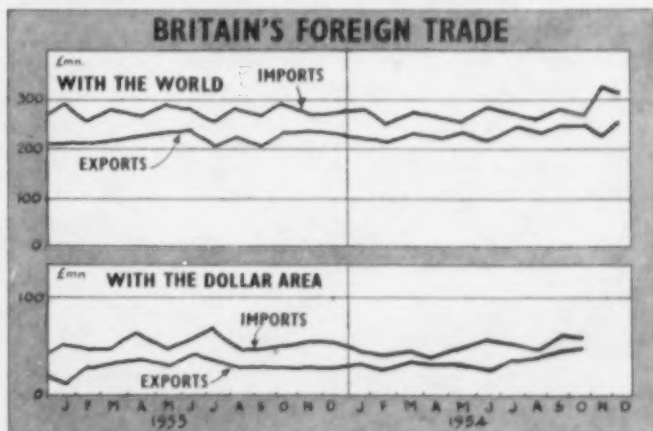
One of the main tasks of the newly-formed Industrial Credit and Investment Corporation is to find means for the further stimulation and develop-

ment of industrial enterprise. Resources total some £13.25 million and the organization has received a loan of \$10 million from the World Bank.

India is co-operating with the U.K. as well as with other countries in her development of atomic energy. As the country has, on the West coast, the biggest thorium deposits in the world, the Indian industry will eventually be built up on thorium, which can be converted to uranium 233. A plant for the extraction of rare earths is already operating in Travancore/Cochin, and a second at Trombay will be starting in May for the extraction of thorium and uranium. In the Bhakra-Nangal areas, a plant is to be set up to produce 250,000 tons of fertilizer in the shape of nitro-limestone, and between five and six tons of heavy water as a free by-product.

India's long-term objective over the next 15-20 years is the doubling of the area under irrigation and the generation of about 7 million kW. of power. The immediate programme includes about 140 large irrigation schemes and 100 power projects, and to date more than 1.5 million acres of new land have been brought under cultivation and additional power capacity of some 450,000 kW. has been provided.

The country's import arrangements for the first half of this year show some further liberalization, and quotas have been increased for items in which shortages have been experienced, including flashlight cases, sheet and plate glass, zip fasteners, transparent paper and certain chemicals.





Samson Clarks have been one of the leading London agencies for almost 60 years. Yet it is significant that they have recently been appointed by several young and progressive companies.

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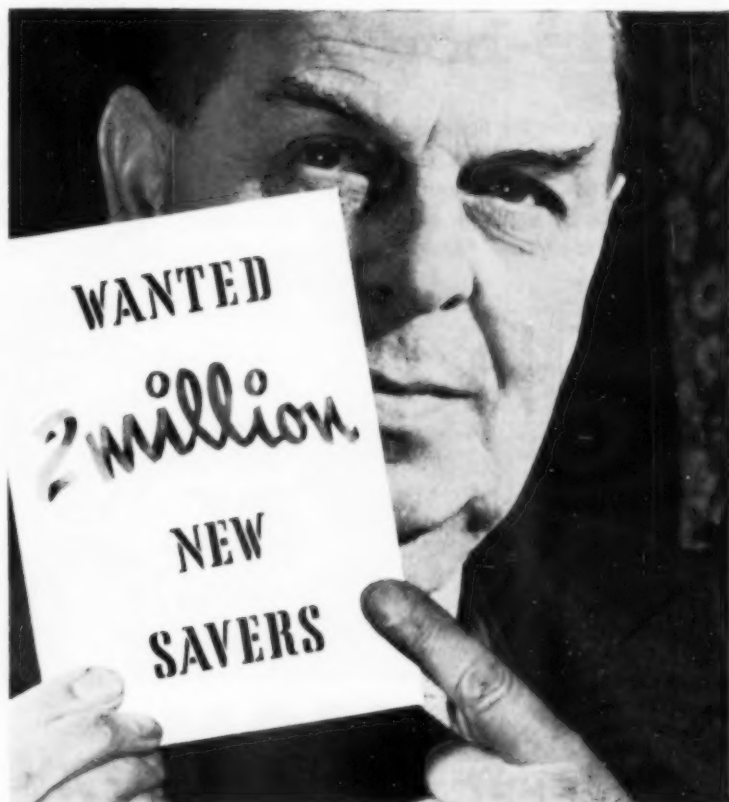
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FROM

LORD MACKINTOSH:—

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## ALL JOIN IN!

You can find out how to become a New Saver from your Bank, Post Office or Trustee Savings Bank, where full information will gladly be given to you.

You'll probably find in your factory, street, school or club, a Savings Group you can join. Whether you decide to join this Group, or start saving on your own, the Voluntary Worker who runs the Group will gladly give you helpful advice about

the different methods of saving — by buying National Savings Certificates and Defence Bonds, and by opening an account in the Post Office or a Trustee Savings Bank. In any case you can start saving right away.

Another way to become a New Saver is by using some of your Savings Stamps to buy a 15/- Certificate or to open an account in the Post Office or Trustee Savings Bank with 5 -

## BECOME A **NEW SAVER** TODAY!

*Issued by the National Savings Committee, London, S.W.7*

# Figure-bound ?

You have doubtless met executives who are figure-bound—you know they have all the latest means for producing masses of figures and records—but cannot see the wood for the trees. Have you ever heard of PLAN-O-MATIC, the amazing new visual system which can deal with ever-changing figure facts by the thousand ? It provides at-a-glance control over Programmes ;

Loadings; Progress; Stocks; Sales; Budgets.

## PLANOMATIC

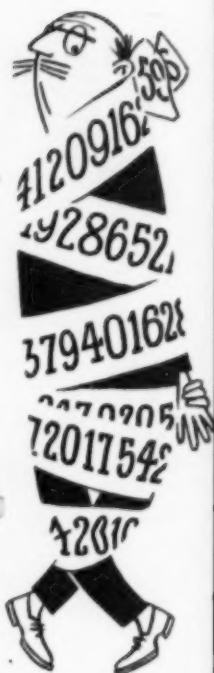
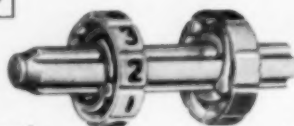
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**A REVOLUTIONARY ADVANCE  
IN VISUAL CONTROL SYSTEMS**

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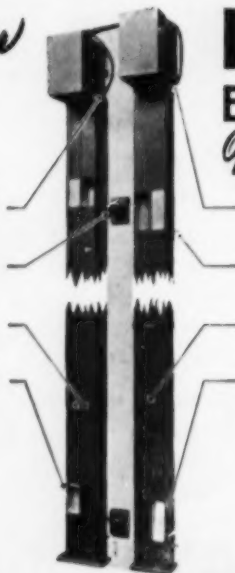
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**THE *new***

**OLD MODEL**

- a. Motor Wired to Mains by Customer.
- b. External Switches.
- c. Double Casing.
- d. Small car for Cash and papers.



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CASH AND DOCUMENT  
**ELECTRIC LIFT**

*Offers these Important Advantages*

**NEW MODEL**

- a. Motor "plugs" direct into Mains (No wiring by customer).
- b. Neat, small built-in switches.
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- d. Large car for cash and papers up to foolscap size.

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# The Ronson that's made for top management



## Ronson Senator desk lighter

Here is a Ronson for the busy man's desk. It is modern, functional, efficient. It will go for many months on one filling. It will make your desk more comfortable to work at; again, you'll find it most convenient when you have a visitor, call a meeting or a conference.

Available in contemporary wood-grain finish, as above, or finished in pigskin. Price, 3 gns.

## **RONSON** for business men

### AN EXCELLENT GOODWILL GIFT\*

\*Let a suitably engraved Ronson desk lighter be your goodwill ambassador. It's a permanent reminder of you and your firm. A special engraving service is available from Ronson dealers. For the address of your nearest dealer who can supply the Senator with specially large engraving plate (not illustrated) and who can undertake this engraving service, please write to Ronson Products Ltd., Leatherhead, Surrey.

FEBRUARY, 1955



## SMALL NON-RESET CYLINDRICAL CASE COUNTERS



TAPE RECORDERS



TAXI METERS

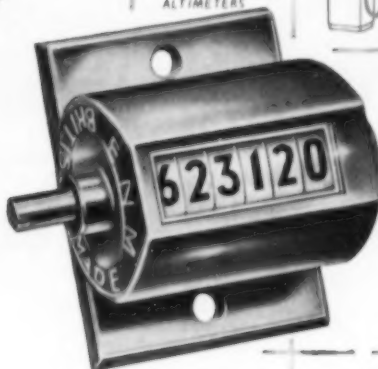
*Is this the answer to your built-in Counter problem?*



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CASH REGISTERS

*The little counter that does the big job*

## Series 421 ENM SMALL CYLINDRICAL CASE COUNTERS

include the following features:—

- Varying Case styles and drives to suit any installation
- Die Cast to fine precision limits from special tin base alloy to ensure great durability.
- No lubrication required.
- Available with 3, 4, 5 or 6 figures of maximum legibility.

Britain's Largest Manufacturers of Counting and Numbering Machines

## ENGLISH NUMBERING MACHINES LTD.

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*All the answers*

**With this most modern and versatile accounting machine**



No other single accounting machine gives you the various answers you need quite so efficiently, quite so economically as the Burroughs Sensimatic. At each quick flick of the selector knob, the Sensimatic is ready for a different accounting job, and it does each one as automatically and accurately as a specialized machine.

It's today's finest, most versatile accounting machine. The exclusive Burroughs sensing panel is tailored to any combination of accounting procedures you wish . . . guides the Sensimatic faultlessly through any post-ing routine.

It's tomorrow's accounting machine, too. To alter an accounting procedure, you change the panel, not the machine. Any Burroughs branch will arrange a demonstration of the Sensimatic model that best suits your needs. Burroughs Adding Machine Limited, Avon House, 356-366 Oxford Street, London, W.1.

**Burroughs**

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## The March of Business

### TOO MANY "SPECIALS"

A CRITICISM which unfortunately applies to many branches of British industry is contained in "A Review of Productivity in the Wrought Non-ferrous Metals Industry," published by the British Productivity Council (1s. 6d.). The review states: "One of the biggest deterrents to increased productivity in the industry as a whole is the variety of its products. Even the largest and most progressive firms, which consider themselves as essentially standard-product mills, seldom, in fact, produce more than 50 per cent of their output in standard dimensions and alloys. The effects of the immense range of metals and sizes called for by customers can be seen most clearly in these giants of industry, where, side by side with impressive, automatic machinery of the most up-to-date design, relatively old-fashioned plant is still kept in operation to deal with 'specials'."

On page 94 of this issue we publish an article describing the work of the British Standards Institution, and the actual machinery by which a proposal may be made for setting up a standard, drafting committees subsequently meet, recommendations are circulated and finally a compromise agreement is reached. The writer of the article found some difficulty in obtaining precise figures on the savings made by British industry through the introduction of standards. This was not because British industry has not made savings—which have, in fact, been vast. In one specific field alone, as the article points out, the estimated savings have more than matched the total cost of the B.S.I. from its inception. The trouble is simply that nobody has got down to the laborious task of taking measurements. This is in contrast to the position in the United States, where, thanks largely to the Department of Commerce, numerous statistics are available of savings due to standardization and simplification.

A useful job of work could be done if some research body—or even an individual research student—were to collect statistics of similar savings in Britain. To the businessman in a hurry, such an academic exercise may appear to be unnecessary. But the figures collected would form a basis on which to launch a productivity campaign for greater standardization and simplification. In fact the businessman in a hurry may be the very one who needs convincing of the need for

getting together with his customers to see how many "specials" could be replaced by standard lines.

★ ★ ★

THE first of the 1955 regional Business Efficiency Exhibitions will be held at the Granby Hall, Leicester, from February 8 to 11. A total of 45 office equipment firms are exhibiting.

★ ★ ★

### HOW TO ATTRACT TALENT

WHY do so many boys with a good education avoid a career in industry? The present educational system is designed to give all the top 20 per cent of bright boys a grammar school or public school education. It is therefore unlikely that in future years the firms which fail to recruit public school and grammar school boys will find enough of their employees with the right ability to fill key executive positions.

This is a problem which has lately been concerning the Federation of British Industries. An F.B.I. pamphlet on "Public School and Grammar School Boys in Industry" (price 1s.) points out that "on the whole headmasters, housemasters at public schools, careers masters and parents are more familiar with the opportuni-

ties of a professional career and of the training provided for it than with what industry has to offer." It is worth looking at this a little more closely. Why, for example, should parents know more about professional careers than about business careers?

Surely the son of a business executive would grow up knowing more about business careers than about the professions? A book review on page 96 of this issue analyses the careers of over 1,200 directors of large companies, only 7 per cent of whom were found to be the sons of business executives, other than directors. It does seem that business executives themselves are not contributing enough of their own sons to the ranks of future industrial leaders. Why, when a son is given a good education, does he so often go into one of the professions, or the civil or military service? Partly because the educational system leads more naturally into these other fields. The boy who does well in school examinations tends to see future success coming through passing more examinations, for the professions or government service.

By contrast, success in industry comes chiefly through an ability to get things done—to produce more, sell more, and so forth. This is an ability as yet untested in the schoolboy, and so he may regard a career in industry as less certain than a career in the professions or government service.

One advantage, therefore, of a firm having a specific management training scheme for recruits from the grammar schools, public schools and universities is that, although no promise may be made of a future executive post, the boy who does this training feels that his risk of failure has been reduced. He did well at his previous training, and he does not expect to do badly at

### NEXT MONTH

#### The Health of Executives

The second article in the special BUSINESS series about The Executive Himself will discuss "The Health of Executives"—how they can keep fit and what far-sighted firms are doing to safeguard the health of their top men.

#### Human Relations in Industry

Another article in the March issue of BUSINESS will describe a new technique now being used for training junior executives in the art of dealing with people. This technique avoids preaching, and provides practical experience.

### THIS MONTH'S COVER PICTURE

A Balliol trainer produced by Boulton Paul Aircraft Ltd. A biography of J. D. North, chairman and managing director of the company, appears on page 89. (Photo specially taken for BUSINESS by F. Dunscombe Honiball, A.R.P.S.)

# ANY RECORDER WILL RECORD DICTATION—*but . . .*

many of the greatest firms in the country (where time and motion study precedes action) choose for correspondence the Emidicta System with its 6 and 12 minute recording and wide range of accessories. For it is the end product which counts—the letter in typed form!

In designing the EMIDICTA we concentrated on the varying needs of the *typing* side, since transcription takes longer than dictation. *For example—*

**The slowing down of playback**—an exclusive EMIDICTA feature—enables the typist to cope easily with quick or complicated dictation ;  
**the line by line repeat mechanism ;**  
**instant remote start/stop by foot or hand ;**  
**immediate indexing for selecting priorities ;**  
**5 ways of listening, including by inbuilt speaker**—all contributing to increased output and typist's comfort.

Ring GROsvenor 7127/8 for an EMIDICTA to be brought to you, and try out the system for yourself. Also ask for a demonstration of the new pocket recorder—the Minifon.

The

## Emidicta

COMPLETE DICTATION SYSTEM



*Remember there's half a century of experience in sound recording and reproduction by E.M.I. (His Master's Voice, Marconiphone, Columbia, etc.) behind the Emidicta System and its guarantee of quality.*

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ALSO SALES OFFICES BIRMINGHAM, GLASGOW, CARDIFF

this new type of management training. In fact it may appeal to him as strongly as any type of professional training.

On page 79 of this issue we present the first of a series of articles "about the executive himself." It describes the formal management training schemes run by four well-known firms and the less formal schemes run by small firms. The article shows the great care which these companies have taken in designing and running their schemes. But in addition to the value of the training itself, these schemes have the advantage that they tend to attract the right type of boy to the company. Both his parents and the careers master at his school are impressed by the fact that he is going to a job with prospects.

The F.B.I. pamphlet on "Public School and Grammar School Boys in Industry" illustrates specimen cards which, it is suggested, companies should have printed. These would contain all the relevant information on a firm's arrangements for recruiting and training potential executives. Copies of the cards should then be sent to the local Youth Employment Officer and to all appropriate grammar schools, public schools and universities.

★ ★ ★

**THE National Factory Equipment Exhibition** will be opened at Earls Court on March 28 by Sir Miles Thomas. Concurrent with the exhibition, the National Industrial Fuel Efficiency Service will present a series of talks on "Fuel Efficiency Pays," the British Productivity Council will stage a one-day conference on "Work Study" and the Institution of Works Managers will hold their three-day national conference.

★ ★ ★

#### HORROR—NOT SO COMIC

AS a "horror" document, guaranteed to make the strongest stomach squeamish, the "Annual Report of the Chief Inspector of Factories for 1953" would take some beating.\* Gruesome details are given of one accident after another in which industrial workers were crushed or burnt to death, deprived of a limb or seriously injured in some other way. This report deserves special attention at a time when there has been a "somewhat more than proportional increase in accidents," allowing for the increased number of workers.

Particularly concerned at the number of accidents to young workers, the Chief Inspector makes a suggestion. "Much might be done by older workers," he says, "at little or no inconvenience to themselves, to set a good example and establish a good tradition. Boys are inveterate hero-worshippers, even in a factory, and have a great regard for 'Bill So-and-So—he's a

\*H.M.S.O. 6s. 6d.

## People Products Places-1

### QUICK-READING AID

—An aid to quicker reading is this new American electric device, which increases reading speeds by automatically moving a plastic marker down the printed page. As the rate of reading increases or slows, the machine can be adjusted to a faster or slower rate.



**HIS TRAVELS PAID DIVIDENDS**—New chairman of Raleigh Industries Ltd. is 59-year-old George H. B. Wilson. His frequent trips abroad, in his capacity as managing director, have been largely responsible for the post-war growth of Raleigh's export trade, which now accounts for 75 per cent of their total output.



**NEW OFFICES**—A feature of the new Willesden office block built for T. Wall & Sons Ltd. is the way in which the main entrance, staircase and cloakrooms are located on the north side of the building, thus permitting uninterrupted office space on the south side. The main part of the building is planned on a 4ft. grid which particularly suits the partitioning used on the two upper floors.

P.P.P. Continued ►



*but tomorrow  
does come*



Going back into the hustle and bustle of the office will come as a jolt. Clattering typewriters, chattering typists, bellowed telephone conversations, tramping footsteps up and down corridors all day long, the rattle of the tea trolley—how can anyone think, let alone work amid so much noise! Call in Cullum. Cullum will mop up noise for good . . . stop its perpetual tug-of-war with nerves . . . let you hear only what you want to hear. Call in Cullum *now*.

**Sound control by**

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**ACOUSTI-CELOTEX**



PROGRESS WITH QUIETNESS

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smashing mechanic, the foreman gives him all the jobs no one else can do," and they will copy Bill's methods—working clothes, goggles and all."

The Chief Inspector goes on to suggest that "If Bill were given a tactful hint by his foreman, or maybe trade union official, he would probably do something about it—it might not occur to him otherwise."

Even, however, with the best of examples set by Bill, the occasional lapses of attention to which all human beings are prone can result in nasty accidents if machinery is not well guarded. Some machinery makers are exemplary in this matter, but with others, the factory inspectors have to "spend much time on educational work." Their chief points of criticism include "neglect to fence drives on the inner side, and failure to protect parts of the actuating mechanisms of machines having complicated automatic actions including cams, cranks, rotating and oscillating rods and spindles."

Some of the best educational work can be done not by the factory inspectors but by the users. A case is quoted of a firm of motor car manufacturers who "designed and fitted 38 different items of fencing to one new machine and then presented the suppliers with a set of blueprints for them."

The largest number of accidents occur in handling goods, and the Chief Inspector suggests that this in itself is a justification for more and more mechanical handling, even apart from the gain in working efficiency.

★ ★ ★

**F**INAL figures of exports of office machinery during 1954 should show a substantial increase on 1953. In the first 11 months of 1954 the total was £10,949,792, or only £141,581 short of the 12-months total for 1953. Shipments of typewriters showed the most striking advance, the total for the first 11 months of 1954 being £2,767,825 as against £1,996,233 during the same period of 1953.

★ ★ ★

#### INSIDE O & M

**O**N page 114 of this issue we publish an article describing how a not-very-large engineering firm which was growing rapidly was able to benefit from the services of an outside consultant in reorganizing their office procedures. The firm wisely took the step of adopting new systems which would be adequate as and when business expanded even further. And the directors have expressed the view that "if further expansion takes place, they will not hesitate to call in the consultants again, just to make sure that they are keeping abreast of development."

For many firms, however, there must

## People Products Places-2

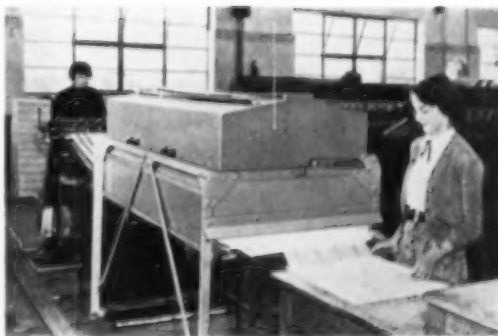
### RECORD BUILDING—

Claimed to be the world's first round office block, this unique structure is the new headquarters of Capitol Records Inc. in Hollywood. One advantage of the design is that the stairs, toilets, lifts, etc. are located in the centre of the circle, and are therefore an equal distance from all extremes of the building. To extend their dollar sales, E.M.I. have recently bought control of Capitol.



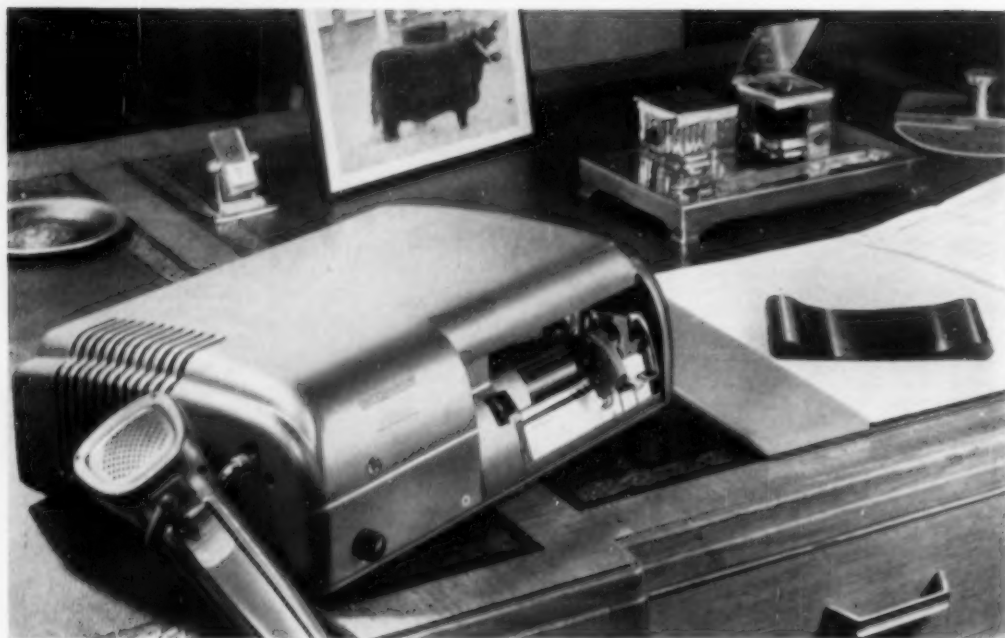
### FROM BACK ROOM TO

**BOARDROOM**—Research expert who has reached the top is Clifford Paine, recently appointed as an executive director of I.C.I. Mr. Paine began specializing in dyestuffs research in 1917, and has been chairman of I.C.I. dyestuffs division since 1952.



**RETAINING EYE-APPEAL**—To prevent gaily-coloured package labels from losing their "glitter," the C.W.S. printing works at Reading is now using this specially-designed infra-red plant, which dries the outer coating of varnish in a few seconds. This has saved both space and labour, as ordinary drying methods take considerably longer.

P.P.P. Continued ►



Lord Luke of Pavenham, T.D., D.L., J.P. As Chairman of Boyril Ltd. and also of the National Playing Fields Association, his time is at a premium. So, on his desk, always ready, you will notice his Dictaphone Time-Master dictating machine.

## Dictaphone goes to work for Lord Luke

To men of Lord Luke's calibre, *time* is perhaps the most valuable commodity of all. And it is for men whose time is precious that the Dictaphone Time-Master is made.

This high-quality precision dictating machine is the most efficient office time-saver that has ever been devised. By cutting routine in half, it makes possible astonishing increases in executive

accomplishment. The executive and his secretary get far more done, in far less time, with far less effort.

The Dictaphone Time-Master dictating machine can save time in *your* office, too. If you would like a demonstration and a free trial, write to Dictaphone Company Ltd., 17-19 Stratford Place, London W.1.

### Some features of the Time-Master

- ★ Only 4½" high, and scarcely larger than a sheet of typing paper.
- ★ Amazingly simple—just pick up the microphone and talk.
- ★ Completely portable—and you can mail Dictabelt recordings in an ordinary envelope.
- ★ Quick playback by simply pressing a button on the microphone.
- ★ Secretary can see corrections.

## DICTAPHONE TIME-MASTER

REGD. TRADE MARK

**GREATEST NAME IN DICTATION**

MADE IN GREAT BRITAIN: Branch Offices: BELFAST, BIRMINGHAM, BRISTOL, COBE, DUBLIN, EDINBURGH, GLASGOW, LEEDS, LIVERPOOL, MANCHESTER, NEWCASTLE



Revolutionary plastic Dictabelt records give permanent, crystal clear recording; are the "inside secret" of the Time-Master.

come a stage when they feel that they could well do with a permanent consultant on their staff—or more precisely an "O & M man." Those who are contemplating setting up an Organization and Methods section should be particularly interested in a seven-day residential course which is to be convened near London by the Office Management Association on April 17. The syllabus will include such subjects as Form Design, Machines and Devices, Training for O & M Work, and Organization of an O & M Service.

Before attending the course, however, the initiate to O & M should read two recent publications. One is a Treasury booklet on "The Practice of O & M," sold by H.M.S.O. for 5s. The other has been published by the Office Management Association at 6s., and is called "How to Design a Procedure." Both may be regarded as compulsory reading for the O & M man himself, but the Treasury publication covers more ground and is therefore more difficult for the beginner.

The sceptic who wonders what O & M is all about anyway, should start on "How to Design a Procedure." This, of course, covers only one part of O & M work, but it does so very clearly, describing stage-by-stage the way to investigate an existing procedure, report on it and, where necessary, arrange the installation of a new or modified system.

The committee which drew up the booklet contained the heads of the O & M divisions of J. Lyons & Co., Unilever, Stewarts and Lloyds, S. Smith & Sons, Imperial Chemical Industries and H.M. Treasury. Their recommendations are not so much general statements as useful check-lists which should ensure that those engaged on O & M work not only go about it the right way but do not overlook any important step. Further booklets in this series are in course of preparation.

★ ★ ★

**A SELF-SERVICE Conference** will be held at the L.C.C. College for the Distributive Trades, Charing Cross Road, London, W.C.2, on April 12, 13 and 14.

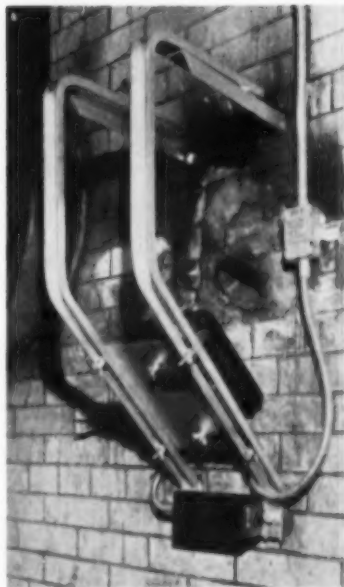
★ ★ ★

#### A TASTY SANDWICH

**A**N example of how to put more "meat" into a training programme has been set by Salford Royal Technical College, who are planning to commence next September a "sandwich" course for textile students. Alternate six-monthly periods would be spent in college and in industry. Advantages of the system to the student are three-fold: First, he will get some industrial experience much earlier, instead of

## People Products Places-3

**SMOKE MONITOR**—A lesson for those concerned with smoke abatement is provided by the experience of the Mount Royal Hotel, London. Photo-electric equipment was installed on the boiler flue 20 years ago. If the density of smoke increases beyond a certain point, a beam of light is cut off and a red warning light comes on. Average cost, including initial outlay and maintenance, is reckoned at less than £2 per year.



**RAPID PROGRESS**—Vice-president in charge of The Pfizer Corporation's European division is British-born Richard C. Fenton, who joined the company as British branch manager only three years ago. A Cambridge M.A. and fluent linguist, Mr. Fenton will supervise the setting up of Pfizer's £2½ million pharmaceutical plant in this country.



**SPACE SAVER**—By using more than 100,000ft. of British-made slotted angle, the U.S.A.F. base at Sealand has been able to reduce the amount of floor space required for storage purposes by one-third. The racking, which was cut to length on the spot and then erected by Servicemen, will bear a load of 500lb. per shelf.

P.P.P. Continued ►

## ***It's the Keyboard that counts . . .***

To the business machine operator the Keyboard is all important. On it the speed and efficiency of her work and her own satisfaction ultimately depend. That's why these two Underwood machines have such a strong appeal. Their all-electric operation enables the operator to work at high speeds without fatigue and to produce work that is consistently neat and accurate.

### **UNDERWOOD SUNDSTRAND ADDING MACHINE**



So easy to operate. Just twelve keys for figure entries and only three feature keys for all totalling purposes. And these few keys are within the span of one hand, permitting touch operation which eliminates the head-swing and eyestrain caused by alternatively looking from copy to Keyboard.

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having to face three years of full-time study at college, after already obtaining his General Certificate of Education. Second, by entering an industrial firm earlier, he is more likely to find his employers taking an interest in him as a potential executive, worth training and worth considering for future promotion. Third, at the end of the course the successful student would obtain a professional qualification, just as if he had attended the present course of three years' full-time study and two years' part-time.

Of the 52 full-time textile students at Salford Technical College now, no fewer than 45 are from overseas. For an overseas student the present full-time course has advantages. But if this country is to train an adequate supply of its own technologists, and not merely provide facilities for others to train here, there is much to be said for the sandwich course which allows the local boy to get the best of both worlds—full-time study and industrial experience.

★ ★ ★

**I**n the first five months during which the Birmingham Exchange and Engineering Centre was open, attendance averaged 5,900 visitors a month, and there were 664 enquiries. Approximately 50 per cent of these were forwarded to the exhibiting firms. Idea of the Centre is to provide a permanent exhibition of engineering products, on unmanned stands.

★ ★ ★

#### NEW RESINS

**O**NE hesitates these days to write about the "latest" of anything, for changes are so rapid that by the time one's words appear in print, the very "latest" may have become old-fashioned. Nevertheless, among the recently developed "wonder substances" with widespread applications in industry and in the domestic field are Epikote Resins. These are a petroleum bi-product, developed by Shell, and their main properties are exceptional toughness, flexibility, adhesion and chemical stability. They make very good protective coatings for engineering products, particularly in view of their great ability to adhere to metals, both non-ferrous and ferrous.

Although dearer than the alkyds and other resins used as surface coatings, it is claimed that in some cases these new substances make it possible to use less expensive materials underneath, and so they result in a saving.

Epikote resins are also used in the "potting" technique to cast a protective surface over electrical coatings. And they can be used for bonding glass fibre, to give a strong structural material which is highly resistant to chemical attack.



## People Products Places-4



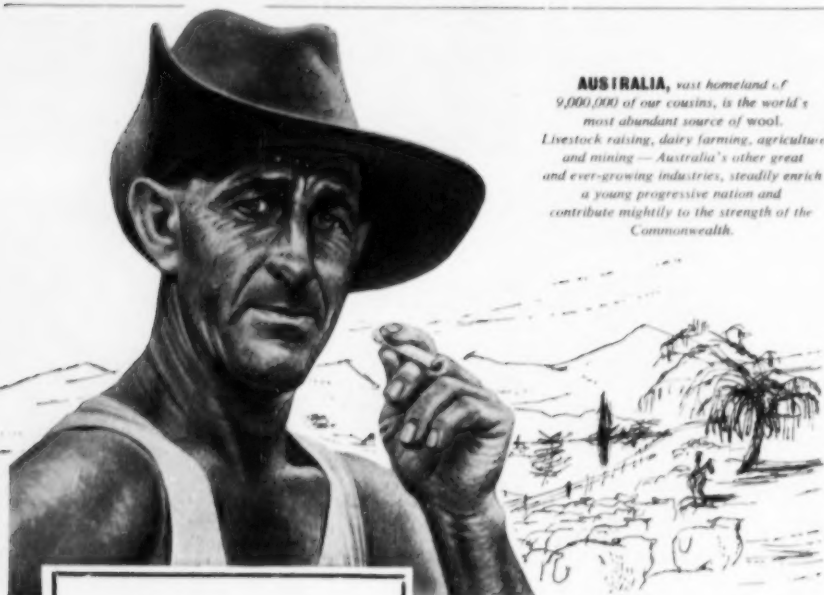
**FOCUS ON SHO? DISPLAY**—TOP is the shop front at the new North Harrow branch of Currys Ltd. To avoid an impression of overcrowding, display cases for smaller goods are set along the sides of a 15ft. arcade. This arcade leads back to a large plate-glass facade which "windows" the interior of the whole shop.

**CENTRE**—Inside the shop. At the far end are the counters and fittings for storing smaller items, while on the right is a panel of inset display units for radio and TV sets.

**BOTTOM**—Movable platforms ensure that large-size radio and TV sets can be seen to full advantage, while the smaller sets, housed in the wall panels, can be divided off from each other by partitions, as seen in the lower row, or placed side by side, as seen in the upper.



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About the Executive Himself—  
A New 'BUSINESS' Series

## How Managers are Trained Today

By JOHN PARKYN

**A**LTHOUGH there has been a big increase in the number of management training schemes since the war, instruction of this type is far from new. As long ago as 1881 a course of "administrative instruction" was being conducted at the Wharton School of Finance and Commerce in Philadelphia, and in England a rather similar course began in 1899 at the London School of Economics. It is true, nevertheless, that only in more recent times has training for management become generally accepted as one of the foundations of future prosperity. In recognition of this fact, *BUSINESS* is opening this series of articles on The Executive with a number of case histories describing the training schemes run by several well-known firms.

As might be expected, these firms are all fairly large, with a sufficient demand for new managers to make a comprehensive internal training system

worthwhile. But what of the small and medium-sized firms, whose intake of trainees is, at the most, one or two a year?

Many of the smaller firms have been making good use of the *external* training facilities which are now obtainable at local technical colleges, universities and privately-owned training schools. These courses can also be of value to larger firms, as is indicated by the fact that, in three out of the four case-studies included in this article, internal and external training are dovetailed into the one complete course of theoretical and practical instruction in management techniques.

Although there is a very great variety of external training facilities, they can be roughly divided into two main groups: part-time and full-time.

*Part-time* instruction, many firms have found, is an ideal way of providing trainees with the necessary theoretical background to the practical training provided by the firm themselves. The importance which official bodies attach to this form of education is revealed in the proposal (made in

The case histories presented here describe how four well-known firms operate their own management training schemes. Formal schemes of this type are generally found only in large companies, but this article also shows how smaller firms are using similar techniques on a less formal basis, and how they avail themselves of external training facilities.

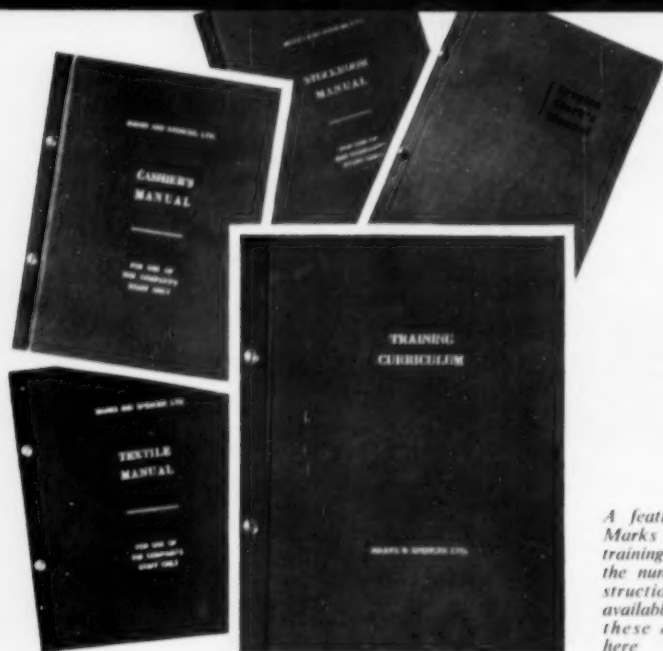
the 1947 report of the Committee on Education for Management—the Urwick Report) that part-time courses leading to a common intermediate examination, and subsequently to a diploma in management studies, should be established on a nation-wide basis. As a result of this report, the Ministry of Education and the British Institute of Management are now jointly operating a system of examinations, based on three years' part-time study in management subjects. All told, some 80 colleges have so far adapted their syllabuses to fit in with the scheme.

*Full-time* short residential courses of instruction are becoming increasingly popular. Among the best known are the four weeks' course held in London by the British Institute of Management, the three months' course held at the Administrative Staff College, Henley, and the "summer school for young executives" conducted at Worcester College, Oxford, for four weeks each year.

Apart from the excellent facilities for private evening study which these residential courses invariably provide, one of their greatest assets is the chance they give for trainees to mix with members of other firms.

A few examples will help to show how some of the more progressive small and medium-sized firms are making use of the courses to suit their own special requirements. T. H. & J. Daniels Ltd., engineers of Stroud,

*Picture above shows a typical discussion group at the Administrative Staff College, Henley.*



*A feature of the Marks & Spencer training scheme is the number of instruction manuals available. Some of these are shown here*

Gloucester, have a payroll of 600. The company have no need for a formal training scheme, but employees who show exceptional administrative ability are sent on the three months' residential course held at the Administrative Staff College. For lower management grades, use is made of the work study course held in Bristol by the Engineering and Allied Employers' Association. Coupled with this external training is practical experience in various departments of the factory.

Venesta Ltd., manufacturers of plywood containers, metal foils, etc., employ rather similar methods. The company management does not usually make a practice of selecting men as prospective managers, but those employees who show a high level of initiative and intelligence are given every chance of improving their knowledge of management problems, partly by being allowed to move from department to department, and partly by supplementing their practical experience with the four weeks' course at the B.I.M. or, if they prefer, a rather longer period of part-time study at evening classes. Use is also made of the courses run by the Regent Street Polytechnic.

A firm which uses external training facilities as a supplement to its own training scheme is Pilkington Brothers Ltd., glass manufacturers of St. Helens, Lancashire. Pilkington's operate a

comprehensive instruction course for university graduates, covering a period of 18 months. This includes experience in the manufacturing, sales and administrative departments, as well as attendance at a management training course, such as that of the Royal Technical College, Glasgow, or the Oxford summer school.

By contrast with this use of external facilities, the case-histories which follow show—in rather more detail—the ways in which four large-size companies are using internal facilities to prepare their promising young men for executive positions.

## Case History 1

**F**EW organizations have greater need to maintain a high standard of management than Marks & Spencer Ltd., and it is not altogether surprising that this well-known firm spend a considerable amount of time and trouble on preparing young men for executive positions, either at head office or in one of the company's chain of 235 retail stores.

Before beginning his basic training, the applicant must pass two interviews. First of these is a preliminary meeting with a member of the personnel department in London or—if the applicant lives too far away—with the regional superintendent of the area or the

manager of the nearest store. The second is with a selection board in London, where a somewhat closer assessment of the candidate's potential abilities is made.

Essential qualifications are that he should be between 20 and 25 years of age, that he should have passed the General Certificate of Education in not less than three subjects (including English and mathematics), and that he should measure up to the company's standards of physical fitness.

If accepted by the selection board, the applicant is officially classed as a management trainee, and receives a minimum commencing salary of £500 per annum. This figure may well be exceeded, however, if he holds any special qualifications which have direct bearing on his abilities as a prospective store manager.

A major feature of the company's two-year training scheme is the way in which it combines practical and theoretical instruction from the outset. The trainee is not merely grouped with other trainees for courses of lectures and film shows, but is assigned to a particular store, where he can learn the technical details he will need to know and, at the same time, absorb the atmosphere of store life. As conditions in the stores vary to some extent (depending on the type of district in which they are located), the trainee usually serves in at least three during his basic training.

## Four Stages

To provide for his theoretical knowledge, he also attends several short lecture courses given by senior staff members at the personnel department's headquarters in Baker Street. These courses are scheduled to take place at the end of each of the four stages into which the two years' training is divided.

The three months' *introductory* stage is designed to give the trainee an insight into the working of the store's warehouse and office sections—a broad understanding of which is considered essential before he can be permitted to work on the sales floor itself.

After studying and participating in the work of the warehouse department (recording of incoming merchandise, issuing of articles to sales departments, etc.), the trainee passes on to the invoice office. Here he assists in checking suppliers' accounts, maintaining stock ledgers and compiling stock records. Finally, in the cash office, he gains a grounding in sales analysis



The English Electric Canberra

methods, banking of cash and payment of wages.

During the last few days of this introductory stage, he works in the office of the staff manageress, as an introduction to the principles and problems of staff administration.

At the end of the first three months, the manager of the store sends in a confidential progress report to the personnel department. If this is satisfactory, the trainee attends a lecture course in London. This deals with basic principles of selling, and is designed to act as a "stepping-stone" between the glimpse into office organization provided by the first phase of training and the introduction to work on the sales floor which starts with the second, or preliminary stage.

On returning to the store, the trainee has an opportunity to put this theory into immediate practice for, during the next few weeks, he is attached as a sales assistant to one of the main sales departments (usually the textile section) where he comes into contact with the public for the first time. He is then placed under the supervision of a departmental manager, and begins a progressive study of various other departments, commencing with fancy goods and foodstuffs.

### Lecture Course

At the end of the preliminary stage (and the first year of training) a second progress report is sent to the personnel department, and the trainee again attends a centrally-organized course of lectures, where the work of the past twelve months is reviewed, a test paper is set, and a brief preview of the second year's work is given.

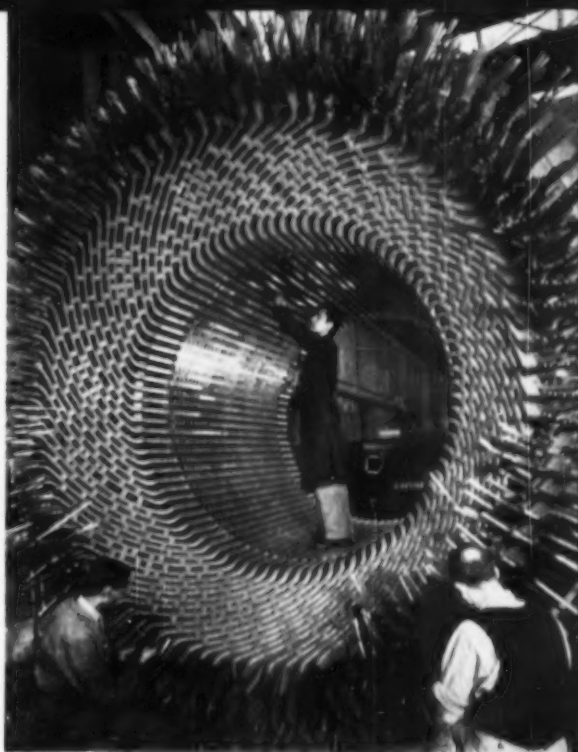
At the commencement of the intermediate stage, the trainee has a further opportunity of improving his knowledge of the sales floor, with special emphasis on merchandising, layout of departments and methods of display. At the same time, he gets his first taste of responsibility, as it is laid down by the personnel department that store managers should contrive to increase, through gradual stages, the amount of responsibility taken by their trainees

*All executives must be forward-looking, but those of English Electric must be technically forward-looking. Graduate apprentices must therefore start with a scientific or engineering background, and the company will add further technical training (as on the right) and in some cases commercial instruction*

during the second year. It has been the experience of the company that most of their management trainees are, at the end of their first year, fully operational and capable of making a worthwhile contribution to the work of the store.

The course which precedes the final stage of practical training is mainly concerned with a study of head office administration. Tours are made of various departments and trainees are able to study at first hand the system of liaison between head office and the stores. At the end of the course, a written examination is given, and the trainee returns to his store for the last few months of his "apprenticeship." These are spent in a general revision of store organization, and in particular he concerns himself with a closer study of the textile departments, as the company are, of course, especially well-known in this field.

The finale to the two years training is a "general training" course. This lasts for three weeks, and includes talks given by senior executives and technicians on manufacturing methods, food hygiene, etc. In addition, the trainees visit the firm's food and textile laboratories, and a number of factories owned by selected suppliers of the company.



At the end of this course, the trainee is usually sufficiently advanced in experience and knowledge to be fitted for a position at departmental management level—the first rung of the ladder which leads to managership of a whole store, or an executive position at head office.

### Case History 2

WITH numerous factories in this country, as well as many associated interests abroad, The English Electric Co. Ltd. is one of the largest engineering concerns in the world. The range of products manufactured is equally vast—from domestic appliances to power-generating equipment and jet aircraft, including the Canberra bomber and the P-1 fighter.

Clearly, in an organization such as this, there is a constant demand for new managers, and to be a manager in such a highly technical organization means basically to be an engineer, scientist or mathematician. Therefore it is hardly surprising that the English Electric management training scheme is part and parcel of the apprenticeship training scheme.

There are over 3,000 apprentices training in the company's British factories at present—divided into craft,



*At residential colleges, training does not necessarily end at five o'clock. Individual discussions can be carried on in a more relaxed atmosphere*

student and graduate apprentices. The company have estimated their likely future needs of executives, and allowing for promotion of the more able craft and student apprentices to executive positions, they have estimated that they should have an annual intake of over 100 graduates in engineering, science and mathematics from British universities, of which about one-third come from overseas.

In planning their training programme for graduate engineers, the company have recognized that there are broadly seven types of career available to the engineer—only four of which are in the industrial field. There is the commercial side of industrial engineering, involving sales and contract work. There is design, also research and development, and of course, manufacturing. As for non-industrial careers, these may be divided into operations and maintenance work—such as for the British Electricity Authority—engineering consultancy, and teaching.

The aim of apprenticeship is to fit a man for his first appointment. From then on, by progressive selection for other appointments, he receives his management training on the job.

The company are fully aware that a proportion of its trainees will become interested in careers which are not available inside its own organization. For example, an engineer may wish to become an executive in a power station, a university teacher or an engineering consultant. In such cases, when the firm feel that it is in the best interests of the man, he is given all possible assistance to secure such a situation,

as it is realized that he is likely to become a good ambassador for the company's products.

Although commercial work is generally not considered as being within the ambit of a qualified engineer, in the case of the English Electric Company an engineering background is essential. Nearly all the products except some of the domestic consumer goods, such as refrigerators, require engineers to sell them. Only an engineer can sell a jet bomber or a diesel electric locomotive. Only an engineer can make the calculations necessary before submitting a tender to an electric supply authority in some overseas territory.

Therefore it has been recognized that although a sales or contract man must have a knowledge of commercial law and practice, he must be an engineer first, and the company must be prepared to put commercial knowledge and experience on top of his basic engineering training.

Commercial engineers are not the only ones who need rather special training. Those who wish to become designers or project engineers must have their period of training so arranged that a substantial part of their time will be spent in the drawing office, and likewise those with a flair for research and development will spend a considerable amount of time in the laboratories.

If a trainee's chief interest lies in manufacturing, there are three different specialist paths to choose from. Some will train in what may be termed "pre-shop" work, to become methods engin-

ers dealing with time and motion problems, rate-fixing, costing, jig and tool problems and work programmes. Those who specialize in shop work, will concentrate on work supervision, inspection and testing, personnel problems, accounting, stores and supply systems. Other engineers will study the problems involved in erecting the heavy electrical engineering equipment manufactured by the company.

The normal length of the training course is two years, but it may be cut to eliminate any part in which a trainee has had previous experience.

Every trainee, on arrival, is given an introductory talk about the nature and aims of the course he is entering and what is expected from him. He then spends six weeks in a training school attached to the factory at which he is to work initially. Here he learns how to handle machines and tools so that he will not only use them safely, but will also avoid making a fool of himself when he later goes into the workshop. The next part of the course involves about six months' work in the machine shop, the foundry, the erecting shop and so forth, obtaining some practical experience of what is done in each. During this period of training, he will attend a series of lectures on what the company makes, the fields of engineering in which he is interested, the history of the company and the types of career which it offers.

The way has thus been prepared for the trainee to attend an interview board, held about nine months after he starts with the company. On this board sits a leading executive from each of the company's main divisions of activity. The trainee is subjected to detailed questioning on what he really wants to do, on his interests and special abilities. The aim of the board is to get him to make up his own mind so that he can then settle down to a period of specialized training.

After a decision has been reached, the trainee is introduced to the head of the department or plant where he is to work for the remaining 15 months of his training, and where his training will be carefully supervised by the head of the department himself. The latter will then provide rather definite guidance as to what courses, technical or commercial, should be taken by the trainee at the local technical college.

During the last three months of this period of training, external study is supplemented by internal lectures on the company's own practices. For example, the student who has studied accounts externally will be given

*Continued on page 150*

### 3 Keys to Management Training

- 1—Provide practical experience by a carefully scheduled "tour" of various departments
- 2—Dovetail this training with part- or full-time study on an external course
- 3—Allow the trainee to "understudy" an executive

# Planning a Sales Campaign in Yugoslavia

By PETER SPOONER

*Here is a valuable case history in how to sell specialized products in a "tough" and generally neglected market. It describes how James A. Jobling and Co. investigated prospects in Yugoslavia, selected agents, and made sure that their products could be sold to the users at competitive prices.*

**C**HALKED on the side of three international trucks which rolled out of a Sunderland, County Durham, railway siding a few months ago were the words "First stop Belgrade." The trucks contained an £8,000 consignment of scientific and industrial glassware from the Wearside factory of James A. Jobling and Co. Ltd.—evidence of the energetic manner in which this old-established company are developing their export trade.

More widely known as the manufacturers of Pyrex brand oven-to-table glass, Joblings have now regained and strengthened their position in the foreign markets which they lost during the war, when their factory was employed almost entirely on government contracts. They have also adopted the far-sighted policy of establishing bridgeheads in new markets which offer only limited prospects at present but are likely to offer much greater prospects in the not-too-distant future.

Yugoslavia falls into this category.

Only a few years ago the country was mainly agricultural; now it is busily developing industrial resources. Its new factories want raw materials, semi-finished products and equipment; many of its 17 million inhabitants are beginning to expect more generous supplies of consumer goods. At present, the development of its import trade is overshadowed by an acute shortage of foreign exchange, but there is already evidence that the position will change considerably within the next decade.

Joblings appreciate that it will be several years before they can sell oven-to-table glass (their main lines) in Yugoslavia. Such goods are regarded as luxuries, and only a very small proportion of the population could afford them. The company believe, however, that industrialization will eventually produce a valuable market for high-class domestic products, and for this reason they are especially interested in bringing the name of Pyrex to the attention of laboratory

workers, technicians and students—the sections of the community whose living standards are likely to increase most rapidly.

Meanwhile, the new sales campaign stands on its own feet. Although the consignments of essential apparatus which they are sending to Yugoslavia represent only a fraction of their overseas trade, by the end of the first year the total is expected to reach a level which will more than justify the initial expense and effort.

Many firms will regard Joblings' experience as of more practical interest than some of the highly-publicized transactions which have been concluded by British manufacturers in other Communist countries. This is not a case in which the sale of heavy capital equipment has been negotiated with the actual users. Each consignment of glassware is held as stock by Joblings' Yugoslav agents, who distribute the apparatus in comparatively small quantities—sometimes worth only a few pounds—to factories and laboratories in all parts of the country.

So the real problems are all concerned with maintaining selling prices at a level which enables Joblings to compete successfully with more conveniently-situated German, Italian and Czechoslovakian manufacturers. And the manner in which these problems have been overcome provides a valuable case-history in the technique of selling specialized products in a





## Advice for the executive who goes himself

1—Get both the British and Yugoslav points of view when making a preliminary study of the market.

2—Avoid severe weather and unnecessarily hard travelling conditions by arranging a visit in the spring or early autumn.

3—Go by car. It will enable you to cover the whole territory in a short visit and see the maximum number of prospective customers.

4—The ability to speak German is almost essential when discussing products and prices with technicians and businessmen.

5—There is no restriction on movement in Yugoslavia. But it is advisable to arrange factory visits through import agencies, who will supply guides.

6—Hotel accommodation in the main towns can be booked in advance. Elsewhere it is generally necessary to take pot-luck—and to be prepared to forego the usual standards of comfort.

7—Take stout, serviceable clothes and plenty of linen—travelling conditions are often hard outside the towns.

"tough" (and generally neglected) market.

Joblings' success in Yugoslavia is the outcome of two preliminary visits by their export sales manager, 38-year-old C. L. Songhurst. He believes very strongly in the policy of "seeing for himself," rather than relying entirely on the resourcefulness of local agents, and since joining the company in 1952 has made extensive sales and market research tours in many parts of the world.

The idea of exploring the Yugoslav market occurred to him about 18 months ago. Before attempting to plan a definite campaign, he gathered together as much information as possible about the country's social, economic and geographical conditions. This information was drawn from a number of sources, including the Board



Small items of Laboratory apparatus make up a large part of the consignments sent to the Yugoslav agents

of Trade, the Federation of British Industries, the Yugoslav Embassy, travel agents' literature and travel books: his aim was to obtain a full, unbiased picture.

The preliminary research confirmed his impression that trading conditions in Yugoslavia were quite different from those in other European countries, and he realized that such problems as arranging stocks, credit, insurance (with the proviso that all claims would be paid in sterling) and bank guarantees could be settled satisfactorily only through personal contacts.

Although it was possible to obtain a visa in three or four days, Mr. Songhurst delayed his trip until February, 1954. Yugoslav winters are intense, and he was not prepared to create additional travelling difficulties by putting his plans into effect too soon; after all, the whole object of the visit was to see as much as possible as quickly and economically as possible.

On his first trip, Mr. Songhurst made the journey to Yugoslavia with another representative. They travelled by car, driving in turns, and reached the frontier only 48 hours after they left Calais. Taking one of the regular rail or air services would have been less strenuous, but Mr. Songhurst wanted to be completely mobile inside Yugoslavia—a country whose transport systems are still restricted and whose new industrial centres are scattered over a large area.

Mr. Songhurst was going in "blind," without preliminary contacts and without a hard-and-fast itinerary. His only "brief" was a list of import and agency enterprises which he had obtained in ad-

vance through the Yugoslav Embassy.

The visit lasted ten days. During this period he managed to cover the important industrial areas around Ljubljana, Zagreb and Belgrade. His aims were (1) to determine quite definitely whether it was an economic proposition to sell Pyrex products in Yugoslavia; (2) to ascertain the strength "in the field" of foreign competitors; and (3) to formulate a policy.

From officials of the State Commercial Department and representatives of the import agencies he obtained a considerable amount of information. He also visited a number of government laboratories and independent factories, and discussed his products with potential users. This, he believes, was the most important feature of the trip; more than 15 years in the export business has convinced him that a manufacturer's representative can sell successfully only if he goes into the bazaars, shops and factories and finds out what the customers really want.

There was no difficulty in arranging such visits. Mr. Songhurst found that both officials and businessmen were eager to co-operate with British manufacturers, and welcomed an opportunity to "show off" some of their country's post-war achievements. Yugoslav guides were supplied by the agents, but he was expected to provide his own transport—another advantage of taking a car, since taxis were rare and extremely expensive.

He also found that being able to speak German was more than an asset; in many cases it was absolutely essential. Although English is now showing signs of becoming the "second



foreign language" (in place of French) its use is still restricted to a comparatively small number of professional workers. But technicians and scientists can generally follow a conversation in German, and, in any event, it is invariably possible to find someone who can translate German into Serbo-Croat or other Slav languages.

His investigations convinced Mr. Songhurst that Yugoslavia was a promising market for scientific and industrial glassware—if it could be sold at the right prices. Leaving aside the possibility of dealing directly with the larger factories (some of which were permitted to arrange imports on their own account), there were two alternative methods of launching the campaign. Either he could offer his company's goods to an import trading enterprise, or he could make an agreement with one of the many agency enterprises which were allowed to represent foreign firms on an exclusive basis.

The disadvantage of the first method was that an import trading enterprise could only act as factors, accepting and placing individual orders. An agency enterprise, on the other hand, could promote sales of specific products, hold consignment stocks, and (where necessary) provide after-sales service.

### Choosing the Agency

Mr. Songhurst decided, therefore, that only the second method would enable the company's products to be sold in Yugoslavia on a really competitive basis. By the end of his first visit, he had selected an agency enterprise and made tentative arrangements. His choice was made by taking into consideration these criteria:

- 1—The agents had to have as much commercial experience as possible—an important point in Yugoslavia, where new commercial enterprises are springing up continually as the new industries expand.
- 2—They had to have branches in all parts of the country, to ensure that their contacts with customers were really "lively."
- 3—They had to handle a number of high-class non-competitive lines—thus allowing Joblings to benefit from the goodwill and prestige which these goods had already established.

The tentative arrangements were modified slightly during the next few months. In their final form they were approved by the State Commercial

Department, and a "coefficient" was fixed for the types of apparatus which Joblings proposed to sell.

(These "coefficients" replace the usual system of issuing licences; they act as import taxes, and allow the Federal Government to control the pattern of the country's import trade. To calculate the tax, the price of each commodity in dinars—current rate of exchange: 840 to the pound sterling—is multiplied by the appropriate coefficient. In the case of essential capital goods the coefficient is usually 1, which means no tax; in the case of luxury goods, coefficients of 4 or higher are common.)

The arrangements were concluded about six months after Mr. Songhurst

returned from his visit. Deliberately the campaign was held back until his first impressions of the market's requirements had been endorsed by staging an exhibition of the company's products at the Zagreb trade fair in September, 1954. Their stand cost about £200—the initial arrangements being made through a British firm specializing in this type of work—and was manned by the agents' representatives.

This exhibition served two purposes. In the first place, it brought the company's products to the attention of a much larger number of prospective customers than had been possible during a brief visit; in the second place, it tested the response to individual



*Above: At the factory, the glassware is packed in cardboard containers. Below: The containers are loaded into the international rail trucks which take them straight to Belgrade.*

items of equipment, and thus helped to determine the composition and size of the first stock consignment. A few domestic lines were included—just to strike a spark in the long-term campaign.

Almost as soon as the fair had ended, Mr. Songhurst visited Yugoslavia again, saving time and money by making this trip during the final stage of a tour of Southern Europe. He discussed with the agents the final details of the agreement, renewed the most promising of his early contacts, and followed up enquiries which had arisen as a result of the exhibit at Zagreb Fair.

Once again, he travelled by car; but on this occasion he broke new ground by flying as far south as Sarajevo and Spitt, into the uncultivated region where industries are just beginning to develop. Driving hard and living hard, he found that he could cover the whole territory in a period of 10 days.

Now it was time to send in the first consignment of stock. The real problem—indeed the crux of the campaign—was to keep delivery and handling costs at the lowest possible level: it was useless, Mr. Songhurst appreciated, to think only in terms of f.o.b. prices when assessing the market prospects and considering the strength of foreign competition. For this reason, he decided to make use of the international rail/ferry service, thus enabling each consignment to be conveyed in sealed trucks from Joblings' factory to its destination in Yugoslavia.

This method of shipping has a number of advantages. Less handling means less danger of breakages. Packaging costs are remarkably low: the apparatus is generally despatched in ordinary cardboard containers. To save space, some items are nested and stacked in straw, the containers being sent "flat" for use when the consignment reaches the agents. Deliveries are swift: as a rule, the journey from Sunderland to the Yugoslav frontier takes a fortnight.

### Freights and Prices

Whereas the shipping of crated consignments by sea would probably inflate f.o.b. prices by as much as 40 per cent, the rail/ferry method produces an uplift of only 7½ per cent. Thus Joblings' landed prices are kept within 2 or 3 per cent of those offered by German and Czechoslovakian firms.

Selling prices are fixed by the agents. After adding their commission, they are allowed to inflate prices within limits prescribed by Joblings to cover unpacking and distribution costs.

It should be emphasized that although they are controlled by the State, the agents operate in much the same way as any British import house. Like all commercial enterprises in Yugoslavia—where trade is more liberalized and decentralized than in other Communist countries—they are expected to make profits, and to compete as vigorously as possible with other organizations, domestic or foreign.

The first consignment of stock was practically liquidated by Christmas, and further consignments are now being sent at intervals of approximately two months. Joblings consider that it is better to ship six times a year than to ship once and incur unnecessarily heavy storage costs which would inflate selling prices. Their aim is to strike a



Yugoslavia now takes only scientific and industrial glassware; eventually there will be a market for domestic lines

compromise between the disadvantages of overstocking and the advantages of enabling their agents to deliver from stock any one of a large range of items.

During the present year, Joblings intend to spend a limited amount of money on advertisements in the Yugoslav technical Press. The copy will be prepared in Britain to ensure that it has the right approach, but will be translated into the vernacular, and placed in the most suitable journals, by the agents.

Mr. Songhurst proposes to keep alive the personal contacts which he has already established. Apart from any other consideration, he believes that an experienced British salesman is in a better position to assess marketing prospects than many of the local representatives, whose commercial experience is limited by the speed with which their enterprises have grown up.

He plans to visit Yugoslavia twice a year, regarding this as a reasonable proposition, since the trip can be incorporated economically in any sales

tour which already takes in Germany, Austria, Hungary, etc. Even his special visit in February, 1954 was not unduly expensive; about £120 for petrol, plus three or four pounds a day for hotel accommodation and other items. In the main towns, a single room in one of the best hotels costs between 350 and 700 dinars (less than £1 a day) and normal "business expenses" are more than adequate.

### Car is a "Must"

From his own experience Mr. Songhurst believes that a car is essential—at least for a representative who wants to cover all the industrial areas in a trip lasting only 10 to 14 days. Petrol is plentiful, but costs up to 10s. a gallon, although the Yugoslav Embassy supplies vouchers which enable petrol to be bought anywhere in the country for two-thirds of this price. The motorist must keep a full tank (since filling stations are rare in the rural areas); be prepared for a considerable amount of hard driving along dusty and sometimes unfinished roads; and accept with resignation the fact that the car will pick up a few rattles during the more rugged parts of the trip. But the Landrover type of vehicle is not essential; Mr. Songhurst used a 15 h.p. Wyvern, and has found it quite satisfactory under all conditions.

Outside the industrial towns, hotel accommodation is generally primitive, and the traveller must be prepared to forego the usual amenities. A room with a bare floor and no sheets on the bed is to be expected—so is a night on the back seat of the car! Hotels in Belgrade and other large towns can be booked in advance through the usual agencies, but elsewhere it is often necessary to take pot-luck.

Yugoslavia—approached in this spirit—is not a country for bowler hats and immaculate suits. Stout, serviceable cloths and plenty of linen (the roads can be very dusty) will suffice if the trip is made in either the spring or late summer. Other essentials include good health, a recognition of the fact that Yugoslav businessmen are really anxious to co-operate with British exporters but have limited resources at present, and a tolerant attitude towards amenities and ideas which may not meet with the traveller's full approval.

Mr. Songhurst's experience of the market bears out the verdict of other British businessmen who have visited Yugoslavia within the past two or three years; there is plenty of business to be found—by people who are prepared to go and look for it.

# Management at Work

## EXPORT OPPORTUNITIES

**A**N unusual case history on page 83 of this issue describes how James A. Jobling and Co. Ltd., Sunderland, makers of Pyrex domestic and scientific glassware, have established an export trade with Yugoslavia, a country whose rapid industrialization is creating new overseas marketing prospects.

Another developing market—on a larger scale—is Latin America. According to J. P. Ford, 42-year-old chairman of the Institute of Export, Britain could quadruplicate her exports of capital goods to Latin America within five years.

He draws this conclusion after making a 13-week, 30,000 mile tour as managing director of Associated British Oil Engines (Export) Ltd., Brush Export Ltd., and National Oil Engines (Export) Ltd., the three companies responsible for the Brush Group's overseas sales. During this tour, he met senior ministers, state banking officials and industrialists in 13 Latin American countries.

On his return to England he declared: "Latin America is in the same position as the United States in the 1870s. Her potential development is incalculable. British manufacturers must take advantage of the situation now. Tomorrow will be far too late.

"British deliveries, which have been showing an improvement, are now falling off again. If we do not watch our step, we shall not achieve this potential export target of £400 million within the next five years."

At Bogota Trade Fair, Mr. Ford pointed out, only two British firms were represented. Yet one of these firms alone took orders for more than £2 million worth of equipment.

Mr. Ford emphasized that stock lists, catalogues and other sales literature should be priced in the local currency or in dollars; few South Americans understood British currency.

As an example of bad management in relations with South American firms, he quoted the case of a British company which lost a £750,000 order because a postal clerk sent a set of documents by surface mail instead of by air—thus missing the deadline.

Mr. Ford has had considerable experience in the exports field. Before joining the Brush Group he was with



J. P. FORD

*Tomorrow will be too late*

British Engineers Small Tools and Equipment Co. Ltd., as the chief executive responsible for the formation and operation of the BESTEC export organization. At the same time, he was the general manager of Scientific Exports (Great Britain) Ltd., responsible for operating the SCIEX export organization, covering a group of leading manufacturers of scientific equipment.

## CASE STUDY USES

**A** QUESTIONNAIRE circulated by Newman Neame among industrial users of their case-studies on human relations problems reveals some interesting applications of this technique.

The training department of Chappie Ltd., Melton Mowbray, finds that a case-study training programme provides an excellent opportunity for supervisors to learn the directors' viewpoints and *vice versa*. By including representatives of various specialist departments—accounts, purchasing, research, sales, etc.—they believe that much potential inter-departmental friction is prevented.

An airline uses the technique in selecting men for the more important administrative posts. After preliminary interviews, the ten most promising candidates are asked to discuss a case-study. At the end of an hour or so, when the main points have been covered, the discussion is broken off and the documents are taken away. The candidates are then asked to write a summary of the case, an analysis of the

problem situation, and their suggested solution. They have also to prepare a more detailed report which has to be submitted within two days.

Their reports, together with their performance in the discussion, are assessed in conjunction with the initial interview. The results so far have been satisfactory; it is also found that the candidates themselves approve of the procedure.

## CARTOON ACCOUNTS

**T**HE North Western Gas Board are a nationalized concern who believe in telling their employees where the money comes from—and goes. A special "edition" of the annual accounts presents the Board's performance in their fifth year by employing strip-cartoon techniques. Its title: *Across the Hurdles in Mr. Therm's Point-to-Point*.

The "bare figures" of income and expenditure are enlivened by a picture of the Lady Godiva Stakes. Employees who "took their jackets off" to achieve



*How the money was spent—the cartoon puts over dry facts*

last year's results are encouraged to make even greater efforts this year.

The leaflet also reports pictorially on other 1953-4 achievements: the development of new processes, and the establishment of joint consultation committees and training centres.

## COSTLY NEGLECT

**D**EPRECIATION of lighting installations, due to inadequate maintenance, increases the cost of useful light by at least 50 per cent, members of the Illuminating Engineering Society were told at a recent meeting.

The speaker was W. Robinson, B.Sc., lighting officer of the Electrical Development Association. He was presenting a paper on lighting installation maintenance prepared jointly with



J. W. Strange, Ph.D., of Thorn Electrical Industries.

They based their observation on visits to a wide variety of factories, and suggested that 50 per cent was probably an under-estimate. Grime-encrusted reflectors were a familiar sight, and there were few instances of systematic maintenance. In many cases cleaning was done only when the dirtiness of the fittings became apparent.

This attitude towards lighting maintenance was influenced by the fact that neglect did not have the serious consequences which might follow neglect of other forms of plant maintenance. Nevertheless, even a very thin layer of dust on a reflector could reduce the fitting's light output by 10 per cent or more.

Tests had shown that cleaning the lamps at intervals of 12 months had considerably less effect than cleaning the reflectors. But the results obtained in a woodworking shop revealed a significant exception. Both lamps and reflectors were coated with fine sawdust of a sufficiently light colour to produce little effect on the reflectors, while reducing by their opacity the lamps' output. It was clear that where light-coloured dust was predominant, simple lamp cleaning played an important part in the maintenance procedure.

Mr. Robinson pointed out that cover glasses did not necessarily reduce the depreciation rate; unless properly sealed, they often made things worse.

### SAFE PASSAGE

VEHICLES entering the works yard of R. B. Pullin & Co. Ltd., Brentford, Middlesex, from the main road have to pass down a narrow ramp between the main office block and the clocking hall. The approach is hidden from pedestrians leaving either of these buildings, so the firm—who make electrical and scientific instruments—

have installed a foolproof control system.

This consists of a traffic barrier interlocked by electro-mechanical gear with a pedestrian barrier at the entrance to the clocking hall. When the former is raised, the latter is automatically closed. A guard rail protects pedestrians leaving the office block.

Operation of the traffic barrier is controlled by a simple three-position switch. In the mid-position the power supply is cut off; thus the barrier may be stopped, if an emergency arises, in any position.

The system was installed about two years ago. It has worked so well that the company are now marketing it for the benefit of other firms with similar problems. An example, it seems, of the cobbler's child being well shod—and the cobbler gaining new business on that account.

### SAFETY IDEAS

MANY British firms are finding that well-planned safety propaganda is a particularly effective means of reducing industrial accidents. In the U.S.A. the psychological approach is certainly regarded as more important than legislation or punctilious machine-guarding.

Here are four specific ideas from both sides of the Atlantic:

1—A Colorado (U.S.A.) steel company photographs a skeleton in dangerous situations—like riding on a crane-hook or removing a fuse from a live circuit—and uses these pictures on works posters and in their house journal. The skeleton, affectionately known as Mr. Bones, also appears on small safety message cards issued to foremen.

2—Less ghoulish in their approach, West Virginia Pulp and Paper Co. put a display of safety equipment "on the road" from time to time. The display visits all departments of

the mill in turn and provides a useful "refresher" course for the operatives. Equipment thus displayed includes oxygen breathing apparatus, goggles and face-shields, helmets, safety belts and protective clothing.

3—Daniel Doncaster and Sons Ltd., Sheffield steelmakers, have tried the effect of staging a "spare a minute for safety" week. All their workers were asked to think of safety for one minute each day, and to note on the perforated blank pages of a special booklet any hazards which they observed during the day. At the end of the week, prizes were awarded for the best safety suggestions.

4—At the Peterborough works of F. Perkins Ltd., diesel engine makers, a 3ft. square board, painted orange with a large black spot in the centre, is hung in the department which had the highest number of accidents during the preceding month. A glass-fronted cabinet on the shop-floor shows comparative monthly figures.

These examples indicate four different approaches. But they have one thing in common: in each case the company are able to report that the accident rate declined after the idea was introduced.

### Reviews in Brief

**FINANCIAL ASPECTS OF INDUSTRIAL MANAGEMENT** by G. D. BOND (Butterworth) 40s. For the person starting up his own business, or for the rising engineer or other specialist who is being given greater management responsibilities, this book may be regarded as a "complete guide" to the control of a business enterprise. It does not, of course, touch on the human relations side of management, but it covers far more than most readers would generally consider under the title "Financial Aspects." For example, it deals with company structure, work study and measurement, incentive schemes, financial and cost accounts, standard costing and budgetary control, industrial taxation, depreciation policy, stock evaluation, reserves and dividends, pricing policy, and even insurance and pension schemes. All this before the book starts to discuss financial structure, including the various types of capital, the sources of funds, the valuation of shares and—coming right up-to-date—share bid techniques.

**PROFITABLE SMALL PLANT MANAGEMENT** by M. H. GOTTERER (Bailey Bros. & Swinfen) 44s. As the title implies, this book describes various types of plant layout, wage incentives, production control, materials control, etc. which are suitable for use in the smaller firm. Although some of the book is rather general, it also gets down to describing in some detail the specific methods used in plants operating today.

**AUTOMATIC MERCHANDISING** by M. V. MARSHALL (Harvard Business School) £3.50. For those who see a future in selling their products via slot machines, this is a thorough study of American experience, discussing location of machines, servicing, operating results and control procedures. Case studies of actual automatic vending companies are presented.

**OUTLINES OF INDUSTRIAL LAW** by W. M. COOPER, 2nd edition, (Butterworth) 30s. A revision to bring up-to-date the text-book first published in 1947.



Interlocking barrier system minimizes the danger of accidents at the entrance to R. B. Pullin & Company's works yard



For those who argue that Britain needs more technician-executives, there is strong evidence in the life of John Dudley North, chairman and managing director of Boulton Paul Aircraft Ltd. Mr. North joined aviation in its pioneering days and became an aircraft designer before he was out of his teens. After the first world war, when the sudden fall in demand decimated the new aircraft industry, he showed himself one of the few men able to assess the market realistically. That assessment, combined with technical foresight, produced a design policy which held good for a quarter of a century and proved a stable foundation for his firm's success.

**T**O become a pioneer in a youthful spirit of adventure is one thing. To use pioneering shrewdly and deliberately as a business policy is quite another.

John Dudley North has done both. The first placed him among the men whose vision and willingness to risk their necks gave British aviation its start. The second established him in the far smaller group of those who equipped themselves to meet the very different hazards of a new manufacturing industry.

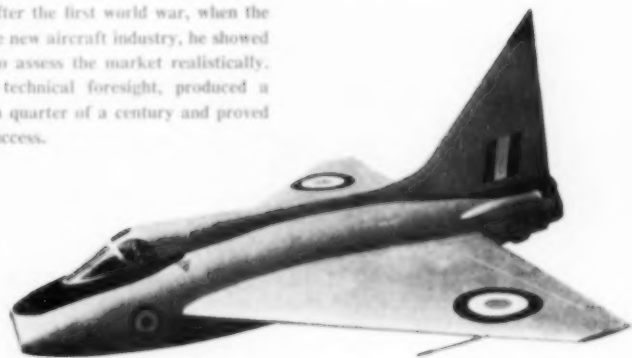
Today, the boy who worked under Grahame-White at Hendon has become chairman and managing director of Boulton Paul Aircraft Ltd. His story not only spans the history of a major industry; it is also a study in the combination of technical and executive qualities which that industry has demanded to an exceptional degree.

Young North's entry into aviation was of his own making. The only strong occupational association in his family background was with the sea, and his tutors at Bedford School saw his future in terms of a university and the civil service. But by the time John was 14 (and that was in 1907), Frenchmen were coaxing their first aeroplanes from the ground. The following year, their British counterparts were making tentative hops.

The virus caught. John North read everything about flying that he could lay his hands on. He made models. He even launched an association of amateurs to build an aeroplane.

The family regarded these activities as sheer lunacy. At 17, John was duly apprenticed in marine engineering, first at Southampton and later at Belfast. But flying remained his only spare-time study. Through that study, the enthusiast finally won his spurs.

An aviation journal launched a series of competitions in the form of written tests. After John North had won both the first and the second, the organizers decided that they simply



## He Made Pioneering His Policy



J. D. NORTH, F.R.Ae.S.  
*Chairman and managing director,  
Boulton Paul Aircraft Ltd.*

could not allow him to enter again because the rest of the field had to have a chance. It was then that the paper's editor learned for the first time the age of the "man" they had to disqualify—and promptly persuaded his family that he should be allowed to "go into flying." The apprenticeship was transferred to the Aeronautical Syndicate at Hendon aerodrome.

"Going into flying" in those days meant being thrown in at the deep end. After a few months, the Syndicate closed down and Mr. North moved to the neighbouring Grahame-White works. There, things happened fast. Soon after Mr. North had joined the drawing-office staff, Grahame-White's chief designer left the firm. Before

standards. Its designer worked largely "by eye," adding such aerodynamic knowledge as there was and whatever he knew of general engineering principles. He learned the job while he was doing it—and lent a hand with any other job in the place when he wasn't.

It was a life richly rewarding in experience. Other rewards were less conspicuous. Mr. North recalls how, although he had passed the official flying test, he never held a pilot's certificate. The fee for that certificate was two whole guineas . . .

To record all the "firsts" in the North story would be monotonous. But it should be mentioned that the big machine he designed for Grahame-White (for joy-riding with four passengers at two guineas a head) was probably the first truly commercial aeroplane, and that another of the

By WALTER GAUNT

1912 was out, the teenage recruit was designing aeroplanes. When he left Grahame-White in 1914, he was the company's chief engineer with five successful machines to his credit, one of which had broken the world's passenger-carrying record by lifting nine people, powered by a (nominal) 100 h.p. And he was exactly 21.

True, the pre-1914 aeroplane was an extremely simple product by modern

## Some Factors in Mr. North's Career

- 1 First-hand knowledge of every job in the shops
- 2 A belief in talking to people, not at them
- 3 A capacity to switch his main interests from design to production, and vice versa, as dictated by the needs of his industry
- 4 Concentration of research and development on special branches of his industry, so that the company would have something unique to offer
- 5 An interest in thinking about the things other people in the same line of business would not ordinarily do

North designs was the first British aircraft to "loop the loop." More significant in retrospect was the fact that Mr. North was the first man to fit a machine-gun to an aeroplane. With the gun's inventor, Colonel Lewis, he staged a demonstration for War Office experts. They were not interested in the idea. They didn't even want the gun. Lewis did some furious prophesying...

That was in 1913. Before the next year was out, war had settled that argument. It had also ended, once and for all, the old flying days—the days of experimentation for its own sake and "one-off" production. The adventure was about to become an industry. And the pioneers in the cloth caps would have to learn industrial techniques or fall out.

Mr. North was one of those who learned. The Grahame-White company secured some government contracts, but he wanted the production experience which he could only get in a large manufacturing organization. In 1915, he was appointed superintendent of the aircraft department at the Austin Motor Company, Birmingham.

This was immersion at the deep end again—and 22-year-old Mr. North was very conscious of it. From a rather vaguely-defined senior post with a company employing about 150 men, he was going to a managerial position in a big industrial firm, with sole responsibility for a rapidly-growing department which already employed well over 1,000. And the job was one which he had never tackled before—to organize large-scale production.

The situation was also grim in another respect. The Austin Company, guided by the mechanical genius of Herbert Austin (as he then was), had built up a huge organization which was making an outstanding contribution to the production of munitions.

It was, perhaps, not surprising in these circumstances that the manufacture of airframes, which was only a small part of the whole, had been a bit of a Cinderella. Not only had the peculiar difficulties of airframe production been inadequately appreciated, but the contract in hand was for more than 50 aeroplanes to an official design which had been put on the drawing-board with a blithe disregard of the fact that somebody would have to make it.

### Production Problem

When he arrived, one machine was partly built. There were no progress records. There was no shortage list. There was not even a record of the sub-contracts placed—and the quickest way to find out was to make a car tour of likely Birmingham firms and ask whether they had any orders for Austin's. That incident was typical. For a graduate of the old "do-it-yourself" school, the direct approach was the natural one. It proved its worth in handling men as well as materials. The way to settle personnel problems, Mr. North believed, was by talking to people (*to* them, not *at* them). And in this the new superintendent had a lever more effective than a managerial label—his personal knowledge of every job in the shops. He knew what he was asking for and got it. The bits were assembled and the contract was completed.

The next contract—a large one for R.E. 8 reconnaissance machines—was under Mr. North's control from the start. He dealt with tooling-up not only for Austin's, but for the whole associated group (which included Napier and Armstrong-Siddeley). He formulated a schedule. He started his own buying department and made aircraft production as independent of the rest of the organization as possible.

The contract went through on time; at the end, R.E.s were coming through at the rate of six a week. The department was equally successful in handling its next programme of 60 S.E. fighters a month.

Mr. North was entitled to feel that he had a grasp of production problems. He had never intended to abandon design work. Now he was ready to return to it—at a higher level. The opportunity came in 1917, when Boulton and Paul Ltd., of Norwich, offered him the post of chief engineer in their projected aircraft section.

This old-established firm of structural and general engineers had been building aeroplanes to official designs since 1915. Now, they had decided to produce their own machines. Towards the end of the war, the same idea occurred to a number of firms in similar circumstances (among them, incidentally, Austin's). Very few succeeded. Once again, Mr. North had gone in to bat on a sticky wicket.

It was soon clear that the old design skill remained. In 1918, Boulton and Paul produced the *Bourges*, a twin-engined bomber with a speed and manoeuvrability comparable to that of contemporary fighters. This was more than a successful aeroplane; it was the beginning of a totally new tactical conception—the bomber which could operate unescorted and meet fighters on reasonably equal terms. And it was to prove the first of a family which finally produced Boulton and Paul's most successful R.A.F. types. In Mr. North's personal story, the *Bourges* could fairly be described as the first evidence of a quality which was to be decisive for him and his firm—a flair for assessing design policy in terms of long-term trends in the aircraft industry's peculiar market.

### The Lean Years

In 1918, that market was a totally unknown quantity. So were the real economics of aircraft production. The pre-1914 years, with their minute and largely experimental output, offered no guidance.

During the war, a vast manufacturing potential had mushroomed to serve one customer. With the reduction of the R.A.F. to peacetime establishment, that customer's orders dropped abruptly from a flood to a trickle—and the industry, for the first time in its existence, faced the problem of selling.

This soon became a question of simple survival. Air transport companies did not pay their way. Private owners were not queuing up for light

aeroplanes. The fabulous civil market proved a mirage and the lean years of the early twenties took heavy toll of the industry.

Mr. North, as chief engineer, was not directly concerned with policy (he did not become a director until the mid-twenties). But he was responsible for research and development, and the direction which that took in those compassless days was obviously a key factor.

From the first, Mr. North ridiculed post-1918 optimism as to the size of the market. He believed (rightly) that in the long run the only significant demand for aircraft would still come from the government. The question, then, was how his own firm could ensure an economic share of this limited custom.

Mr. North saw the broad answer in specialization — plus pioneering. Research and development should be concentrated upon fields which were likely to become increasingly important, so that the company would have something unique to offer when the demand matured. And, since military requirements might change rapidly for reasons which had nothing to do with technique, there should always be more than one iron in the fire.

The principal fields actually chosen for development were three. One was metal construction. In those days, it was still controversial. Mr. North's view was that its use would become general in a few years.

The second was the fast, twin-engined aircraft—a type with which the *Bourges* had already given the firm a lead. Third, and rather later in the field, was the development of aircraft armament. These three themes were to influence Boulton and Paul products for a quarter of a century—with what success, the record proves.

The firm sold a few light aircraft in the early 1920s, but the chief survival



*Experience, while still in his teens, in designing this "Aerobus" and other machines prepared Mr. North (third from pilot) for taking charge of a large production plant during World War I*



factor in those critical years was official interest in its work on metal construction (which included Britain's first all-metal twin-engined aeroplane, built in 1921). A trickle of prototypes, built to government order, showed continued progress in this field. But it was still hard going.

Then, in 1928, came the breakthrough. The *Sidestrand* medium bomber, latest of the twin-engined line, was adopted for squadron service in the R.A.F. This meant a substantial order.

Shortly afterwards came decisive confirmation of Boulton and Paul's standing as specialists in metal. They were entrusted with the detail design and construction of H.M. Airship R. 101. The scale of the job was prodigious; in terms of production, it was roughly equivalent to the whole *Sidestrand* contract.

Meanwhile, Mr. North had become a director, and he began to interest himself in the techniques of business. Learning as he went along had become a habit. He made himself conversant with accountancy, studied office mechanization and introduced a time and

motion study system into the constructional engineering department. By way of a sideline, he initiated operational research on hot galvanizing.

In 1934, Boulton and Paul's aircraft business was purchased by a new and completely independent public company, formed for that purpose under the name of Boulton Paul Aircraft Ltd. Although the *marque* survived in the name, there was no financial or managerial connection between the firms. Mr. North was made joint managing director of the new company (he became managing director in 1948, chairman and managing director in 1951).

Production was transferred to a new factory on the outskirts of Wolverhampton, built to a design which allowed for exactly the threefold expansion of area that has since taken place.

Output now began to reflect the work which had been done on the third of Mr. North's original development lines—armament. The point was approaching at which speeds would be too great for guns to be operated manually with effect. In 1935, Boulton Paul produced the *Overstrand*, first aeroplane to be

*Continued on page 156*



*Balliol trainers being assembled in Boulton Paul's Wolverhampton works. During Mr. North's term as managing director, the plant has expanded to three times its original acreage*



**1 NOISE ACCOUNTED FOR.** Accounting machines have been segregated in a room which adjoins the rest of the accounts department. Desk workers are not bothered by noise, yet the two sections are close enough to avoid unnecessary movement of staff and documents.

## 'Business' Picture Story

# Ideas for That New Office Building

Now that building restrictions have been eased, companies can have their own particular requirements incorporated in their new premises. In the case of offices, this means more than just a flexible layout with well-lit rooms and an attractive entrance. Careful attention to detail at the drawing board stage can pay dividends in both working efficiency and staff contentment. In the new administrative offices of Richard Costain Ltd. at 111 Westminster Bridge Rd., London, S.W.1., there are several innovations which form a useful check-list of ideas for those contemplating a new building of their own.



**2 FOUR IN ONE.** The cinema, which is used to show films made by the company's film unit. Three sets of sliding and folding partitions enable it to be turned into four small conference rooms. This saves space, for of course, the cinema is not in constant use. Note the use of acoustic tiles on walls and ceiling. A door in each section means that each conference room has its own entrance.



**3 DESIGNED FOR DIRECTORS.** The boardroom is part of an executive suite. The offices of the chairman, directors and their secretaries are grouped together on the fourth floor. This means less noise, and quick inter-communication. Besides the offices and boardroom, there are a kitchen and a soundproof telephone room.

**BUSINESS**



**4 SHAPE CAN BE CHANGED.** Offices have been designed to suit the space required by individuals. Flexibility in the future is covered by the use of demountable partitioning, shown in this picture. Cables for telephones, desk lights and power points are laid behind the detachable aluminium skirting of the partitioning.



**5 FOR THE STAFF.** Because the new building is located in a built-up area with somewhat limited amenities, this lounge has been provided for use by the staff after lunch. Decorated in contemporary style and in keeping with the rest of the building, it adjoins an equally attractive canteen. Staff total is approximately 280.



**6 FOR THE DOCTOR.** Another feature is this well-equipped medical room which is used by the company's doctor during his weekly visit. Principal function of the doctor is not to deal with minor ailments but to watch the health of the executives.

**7 SPEEDING THE MAIL.** The post room is located on the ground floor, but on each floor is a "letterbox" which is linked to it by a chute. Outgoing mail can be "posted" in the boxes at any time, thus ensuring despatch by the following post.

Architect: R. N. Wakelin, F.R.I.B.A.







# How British Standards Help Industry

By SIDNEY KERR

Nationally-recognized technical standards were first produced at the turn of the century to help the engineering industry compete overseas. Since then, not only has the number of standard specifications increased enormously, but the principles of standardization have been extended to many new fields. Today all the interests affected by this work—industry, Government departments and professional bodies—are co-ordinated through the British Standards Institution. This article shows how the B.S.I. provides machinery for joint discussion of needs and joint use of facilities.

**T**HIS is not a new idea thought up by idealistic dreamers or long-haired 'experts.' It springs from the industry itself."

That is how a national organization of manufacturers described one of the more recent British Standard projects for which it sought its members' support. The same words could be applied literally to the British Standards Institution itself. As a voluntary and impartial authority, it has grown in response to the practical needs of producers and users.

The man who set the ball rolling in the 1890s was an industrialist. To show the urgent need for collective action upon standards, he pointed to the loss of markets by British steel merchants. Specifications in this country were so diverse that "anything like economical and continuous production becomes impossible."

His case was sound, and the result was the establishment in 1901 of the Engineering Standards Committee. This set the pattern for all later development, culminating in the B.S.I. On the committee sat representatives of the national organizations of civil engineers, mechanical engineers, naval architects and iron and steel producers. Its original task was to consider the advisability of standardizing iron and steel sections. When its terms of

reference were enlarged (at the request of the engineer-in-chief of the General Post Office) to include standardization of electrical plant, the Institution of Electrical Engineers was invited to join.

Under the main committee were sectional committees which drew up specifications, when requests were received from industry. Represented on them were other appropriate professional and producers' associations, government departments and in some cases bodies such as Lloyds, the underwriters.

The new organization soon proved its worth. Production costs of steel sections alone were cut by an estimated £1 million a year. The demand for standards rapidly outgrew the finance subscribed by the supporting institutions; but in 1903 came recognition of the movement's national value in the form of the first government grant.

With that, the structure of the standards movement was complete. Already it was (to quote the B.S.I. history) "a voluntary body, formed and maintained by industry, approved and supported by the government for the preparation and publication of technical standards that would assist British industrial progress."

The organization which has resulted from half a century of development is shown diagrammatically on page 95.

Today, more than 60 industries are grouped into Industry Standards Committees, which approve the final drafts of standards. They also appoint the technical committees and sub-committees which do the creative work of preparing the standards.

There are Divisional Councils which co-ordinate the work of the Standards Committees, and the policy-making General Council has a majority elected by the Divisional Councils, plus nominees of government departments and of organizations at national level.

The grand total of committee members is about 14,000. But although the machine is vast, its objects demand that it should be meticulously thorough and accurate, flexible and unbureaucratic. Evidence that it has remained so can be seen in the procedure by which new standards are formulated.

Requests for standards usually come either from industry itself, or from distributors, users or research organizations. Often they arrive through trade associations; but the sponsor, it is worth noting, need not be associated in any way with the B.S.I.

## From Idea to Draft

Any suggestion from a responsible source is placed before the appropriate Industry Standards Committee. If it is outside the scope of existing committees, the B.S.I. calls an *ad hoc* conference representing all the interests which might be affected—the industry concerned, users (including government departments) and professional bodies. If they agree that there is a real need for the proposed new standard, a representative drafting committee is formed.

Drafting consists largely of patient and informed compromise—between existing variations already in the field, between the interests of different sections of producers, between producers and users, and between what is technically desirable and what is practically possible. The very scope of the Institution's activities may add to the complications, for the new standard may be affected by work in progress upon standards for allied industries, or even by recommendations due to come before the International Organization for Standardization (to which the B.S.I. is affiliated).

Factors of this kind have to be taken into account at the drafting stage. But the need for co-ordination does not stop with drafting. Every draft standard is circulated for comment to all interested organizations in Britain and overseas. This circulation service demanded an output of more than 5½ million pages from the B.S.I.'s duplicating department last year. Comments received are incorporated in the draft finally submitted for approval to the Industry Standards Committee concerned.

Even after the new standard is in type, a further "outside" check is provided by circulating all printer's proofs to the various organizations concerned; they are also scrutinized by the specialists on the originating committee. Thus the chances of technical error in a final proof are negligible.

Some idea of the volume of work handled by the B.S.I. is given by the fact that in 1953-54 nearly 290 new and revised British Standards were issued.

To find a simple yardstick for the services which industry receives from the B.S.I. would obviously be impossible. It is not often that standards are introduced in circumstances so clear-cut that the results can be shown in terms of, say, reduced costs. In any case, standardization has so permeated British industry in the last half-century that it is now benefitting, in one form or another, every manufacturing industry, practically every office and many homes.

What can be shown statistically is the growing use of standards. In the years 1950-54, subscribing membership of the B.S.I. has grown from

6,306 to 8,400 firms and organizations, and the number of copies of British Standards sold has risen from 656,000 to 914,000. The greatest rate of growth was in the number of licenses to use B.S. certification marks, which jumped from 552 to 1,174 in the same period—due largely to the trend towards certification of consumer goods.

### "By-products"

The basic task of the B.S.I. is still, of course, the production of agreed specifications—the practical minimum in number and the practical maximum in quality. Industry's greatest gains are still those which have always followed standardization—more efficient production, easier servicing and replacement, economies in storage and packaging, greater simplicity in tendering and greater confidence in purchasing. But the increasing scope of the B.S.I.'s work is now producing some by-products of standardization which are almost auxiliary services in their own right.

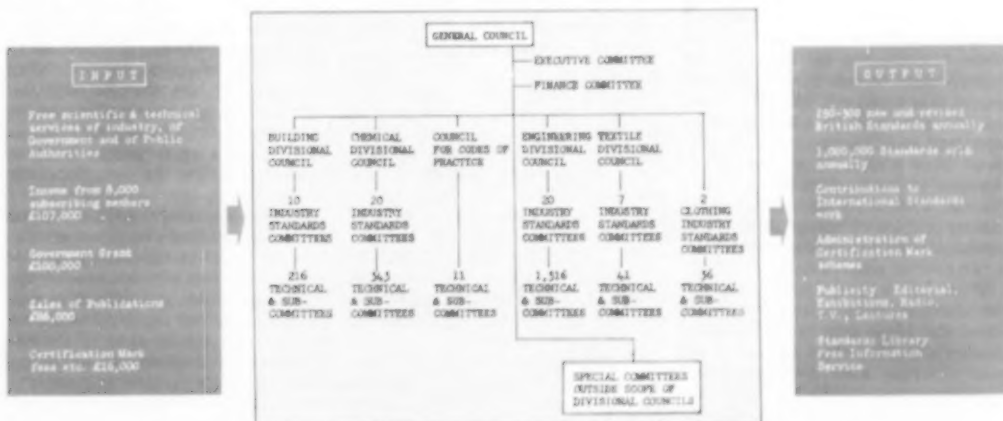
One of these is the reference value of B.S.I. publications. Some standards are major works of codification, like "Limits and Fits for Engineering" and "Engineering Drawing Practice"—to name two which, in the view of many engineers, must have cut costs in their industry sufficiently to pay for the whole work of the B.S.I. In much the same category are the more elaborate of the "codes of practice" which deal with the application and use of materials and equipment, including methods of installation and maintenance.

The Institution's work upon nomenclature has produced glossaries of

terms which are the only "dictionaries" of their kind. In certain industries, it has also cleared up verbal muddles which, quite apart from the danger of inaccuracies, must have wasted staff time on an appalling scale. In the field of fine chemicals, for example, it was found that 70 names used for grades of sulphuric acid could be replaced satisfactorily by seven.

The B.S.I.'s international work places many facilities at the disposal of the exporter—not least the widespread recognition abroad of B.S. specifications. A valuable development of this principle is the B.S.I.-C.S.A. (Canadian Standards Association) Approvals Agency, formed to facilitate British exports of electrical equipment and electrically-operated machinery to Canada. Through it, equipment in these categories can be pre-tested and accepted for Canadian use before it leaves Britain, eliminating the need for type-testing or pilot plant in Canada. Since exports of this kind are valued at more than £10,000,000 yearly, the possible savings to exporters are obviously large.

Another "by-product" of the B.S.I.'s work—less tangible, but very important—has been its effect upon research. The critical survey of current practice involved in preparing a standard often shows the need for further research in the field under review. For this, the B.S.I. relies upon the resources of the Department of Scientific and Industrial Research, the research associations and industrial firms. The result is not only to stimulate research, but to make available to industry in general a product or method embodying research at a level otherwise beyond the reach of all but the largest firms.



The organization, income and work of the British Standards Institution (figures for 1953-54)

# The Career of a Typical TOP INDUSTRIALIST

IT has long been the policy of BUSINESS to publish biographical articles describing the careers of leading businessmen, and drawing attention to particular features from which others may learn something of advantage. Recently, however, a book has been published which provides the first overall view of the typical top executive's career.\* It analyses some of the statistical facts about the careers of 1,243 directors of large British public companies.

The author sent a questionnaire to all the directors (3,215 in number) of the companies that are quoted in the industrial and commercial section of the London Stock Exchange official list, and have shareholders' assets of £1 million or more. The number who filled in the questionnaire was just under 39 per cent of the total.

Many an ambitious young businessman hopes some day to be on the board of a large company. He may get there by rising through the executive grades of a large company, or he may develop a smaller business into a larger one. A third way of getting to the top of big business is through the professions, joining the board of a large company as a professional adviser. The enquiry into directors' careers revealed that 36 per cent of those who filled in the questionnaire started their careers in a large firm (assets over £500,000), 15 per cent in a medium-sized firm (assets £100,000 to £500,000) and 22 per cent started in a small firm (assets under £100,000). Another 18 per cent started in a profession, while 3 per cent began their careers in the civil service, 4 per cent in the regular armed forces and only 1 per cent in other ways.

When the original occupations of the directors were analysed, it was found that 22 per cent had begun their careers "training for an executive post." These were overwhelmingly

the sons of businessmen. There was relatively little management training of the "open to applicants" type when the present generation of directors started their careers.

Another 17 per cent began in engineering, 16 per cent as clerks and another 16 per cent in accounting. Salesmanship absorbed 10 per cent, while 8 per cent began as scientists. The law was the first profession of 6 per cent, while 4 per cent studied company secretaryship. A further 7 per cent began in other professions, such as teaching and journalism. Altogether 8 per cent—mostly the sons of other businessmen—claimed to have started directly in administration, and another 3 per cent were able quite early to develop a small business of their own. The number of skilled tradesmen was 6 per cent, but the unskilled made up only 2 per cent.

As might be expected, in the case of large public companies, the number of directors whose fathers had been on the same board before them was not remarkably high—19 per cent. But

**A new book analyses the careers of over 1,200 leading businessmen and throws some light on the path to the top.**

another 9 per cent were the sons of directors of other firms, and 16 per cent were the sons of small businessmen. The greatest number—22 per cent—had fathers who were in the professions or were in some form of administration outside the business world. Only 7 per cent were the sons of business executives below the rank of director, while 8 per cent had fathers who came from neither the professional nor the executive classes.

Altogether, 89 per cent of the directors had a full-time secondary education, and more than half of these went to a public school. A total of 63 per cent had some form of profes-

sional training after their secondary education, 36 per cent attending a university and the remainder doing other professional studies.

The average age of the directors was found to be 55½ years, and the average age of appointment to their first directorship (not necessarily of a large company) was 38½ years. Even when allowance was made for the fact that those who had joined the boards of their fathers' companies were appointed at a comparatively early age, it was still found that the first appointment came rather early. This suggests that a board appointment is not generally a reward for a senior manager near to retiring age. More often the person with outstanding ability and/or luck gets to the top early, and remains a director for perhaps 30 years.

One of the surprises was the relatively large number of directors who have "stayed put" all their working lives. It is possible that some who replied did not bother to record any of the job-changes they made during the first few years of their careers, while they were settling down. But even so it is remarkable that 41 per cent stayed with the same firm or group of firms throughout their entire executive careers. Another 31 per cent made only one job change, while 9 per cent made two changes, 8 per cent three changes, and only 7 per cent four or more changes.

The moral of this seems to be that those who rise quickly to the boardroom generally have the luck to find a succession of promotion opportunities in front of them, in the same firm. But they must also have the ability to seize these opportunities as they arise. The figures do not suggest that it would be wise for anyone seeking promotion to stay indefinitely with the same firm. If his avenues of promotion are clearly blocked, through there being others of similar age and ability just ahead of him, then he might be wise to move. But an excessive amount of movement can be a disadvantage, and the more opportunities that can be found within the one firm, the better.

Whether the conditions that applied to the promotion of the present generation of directors also apply to the young executives who are now on the promotion ladder, it is difficult to say. But the ambitious executive would be wise to take careful note of the experience of his predecessors, and moreover to study the statistics of American businessmen's careers, which are given in comparative tables, side by side with the British.

\* LEADERS OF BRITISH INDUSTRY by G. H. Copeman, Ph.D., Editor of BUSINESS (Gee & Co. (Publishers) Ltd.) 15s.



*With new works coming into production, employees of the Rugby Portland Cement Co. may later draw substantial dividends*

# Choosing the Best Scheme

By the EDITOR

## Case History 7

**I**N October last year, The Rugby Portland Cement Co. Ltd. announced an employee shareholding scheme under which the company would create one million "A" shares of 1s. nominal value, half of these to be issued to the present Ordinary shareholders, and the other half to the employees. The "A" shares are non-voting at general meetings and without right to surplus assets in a winding-up. Approximately 1,200 employees are eligible to participate in the issue of "A" shares, and allocations of shares will be made broadly according to remuneration and status in the company, the minimum allotment being 250—costing £12 10s.

For "A" shareholders to receive a dividend, the group consolidated net profit for any year must be not less than £900,000, and the gross amount payable as Ordinary dividend must be not less than £300,000. As the profits for 1953 were £633,000, this scheme will result in "A" share dividends being paid only if the company prospers even more than it has done in the past. But with new cement works coming into production, the directors no doubt expect the company to prosper. When the conditions for dividend participation are fulfilled, the "A" shareholders receive £70,000 in dividend altogether, plus 20 per cent of the excess net profit over £900,000, with an overall limit of 12½ per cent of the total net profit. If there should be any future issue of Ordinary shares, other than by a

capitalization of reserves, the minimum conditional figure of £900,000 profit will be increased by six per cent of the proceeds of such issue.

Employee shareholding provides a way of sharing profits with employees, but at the same time ploughing them back for expansion. A final three case histories are presented here, and then all nine cases in this series are discussed, with an eye to choosing the best type of employee shareholding scheme. That recently introduced by Imperial Chemical Industries Ltd. seems to be most suitable for widespread application in industry, subject to slight modifications (described here) to suit the needs of smaller firms.

## Case History 8

**T**HE firm of G. Waddington & Son Ltd., tanners and glove manufacturers, was founded in Beverley, Yorks., in 1849. The business was transferred to its present site in Hull in 1880. From virtually a one-man business, it has expanded until it now employs over 400 craftspeople. One of the directors, Councillor G. P. Waddington, represents the fourth generation since the firm was founded, and some of the employees represent the third generation who have worked with the firm.

The company's profit-sharing and employee shareholding scheme was introduced by the present chairman, T. E. Waddington, 24 years ago. Whether the scheme has since pro-

duced all the results he expected is difficult to say. It has certainly produced an atmosphere of loyalty and identification with the firm amongst a large section of employees.

The scheme was started very modestly by the issue of a small number of £1 6 per cent Employee Preference Shares. It has since developed steadily until now it is a considerable factor in the running and organization of the firm. Every employee of 21 years of age and over, who has been with the company for 12 consecutive months, is now a shareholder, and receives the same dividends as other Preference shareholders in the company.

The number of shares issued by way of bonus to each individual employee is left to the discretion of the directors, but two main points are taken into consideration:

- 1—Length of service
- 2—Position in the company

Employees are also encouraged to purchase shares and some have done





*Group meetings of Kalamazoo employees encourage them to take an interest in the trust fund from which they receive dividends*

so, but the greater proportion of shares has been issued either instead of, or in addition to, cash bonuses.

As the firm has expanded quite rapidly since the war, it needs an ever-increasing amount of liquid capital, and the employee shareholding scheme has helped to keep money in the business.

The directors have given an undertaking that the company's issue of Bonus Employee Shares will always be at least equal to the dividends paid to all other shareholders of the company. Up to the present time, these bonuses have always been at least double the amount paid to other shareholders.

So far, only Preference Shares have been issued to employees, and these shares have no voting rights. But recently a number of Employee Ordinary Shares have been created, which have the same voting rights as other Ordinary Shares of the company. It is proposed to start issuing these in the near future.

Every employee shareholder receives a copy of the company's annual accounts, and an employee shareholders' meeting is held annually, when the accounts are fully explained, and employees are invited to ask questions.

As mentioned earlier, employees are encouraged to purchase shares themselves, and, if they take advantage of this, for every £9 paid by the employee the firm gives an additional £1 towards the purchase of a £10 block of shares.

No upper limit is placed on the shareholding of an individual employee. The maximum number of £1 shares held by any individual employee shareholder at present is 375, while 29 employees hold over 100 each. The total number of £1 shares held by

employees is 10,370, and the total number of employee shareholders is 160.

In the event of an employee leaving the firm, his shares are transferred to other employee shareholders in lieu of their bonus at the year end. In addition to the share bonus, a cash bonus is also awarded annually to all employees in proportion to their earnings.

Following an undertaking made by Mr. T. E. Waddington that employee shareholders would be allowed to appoint their own director to the board as soon as their combined shareholding reached 25 per cent of the company's total issued share capital, in March, 1952, H. E. Turner was appointed by ballot of employee shareholders. Mr. Turner, now 39, started with the firm, on leaving school, as a 5s.-per-week apprentice. His term of office will finish next April.

The duties of the employee director are to represent the employee shareholder's point of view regarding the general policy of the business. He has no responsibility in connection with the day-to-day running of the

business and no additional authority over and above that which he would hold if he were not the employee director. The qualifications to become an employee director are that he should hold not less than 50 shares, and have been with the company not less than three years at the date of election.

At the last annual meeting of employee shareholders, the chairman stressed the success of Mr. Turner's appointment. Many improvements had been suggested, particularly regarding production, better liaison between management and employees, and changes in the firm's welfare schemes. In his own report, Mr. Turner spoke of the cordial atmosphere at the monthly board meetings, and of the co-operation which was always forthcoming from the other directors. In short, the scheme works.

The board of G. Waddington & Son Ltd. believe that where profit-sharing and co-partnership are genuinely adopted, each year that passes brings an increasing sense of satisfaction and reward to those engaged in the enterprise.

#### Case History 9

**K**ALAMAZOO LTD., manufacturers and distributors of business systems, formed a trust fund for the benefit of employees in 1947. One object of the trust is to become eventually sole owner of the company, by continually purchasing shares as they come on the market. The trust started by owning 30 per cent of the Deferred Ordinary Shares, which carry voting rights. These were provided partly through a gift from two of the original directors and the family of another, while the balance of the shares were bought with the aid of a bank loan which was repaid out of the first four years' income of the trust. Thus no dividend income was available for distribution to employees until 1952. Even so, part of the trust income is still used for buying shares, and now over 40 per



*H. E. Turner, the "employee director" of G. Waddington and Son, discusses one of the company's products with T. E. Waddington, the chairman (right)*



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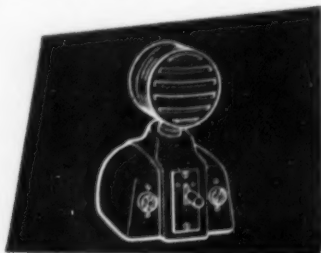
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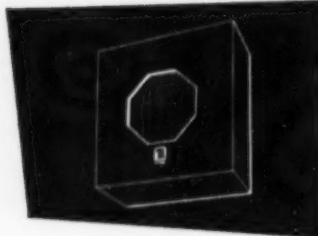
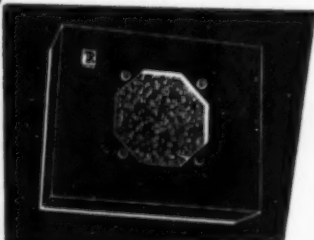
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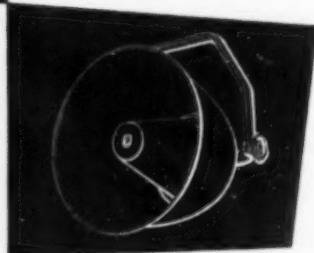
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14 OPERATING BRANCHES THROUGHOUT THE UNITED KINGDOM

cent of the issued shares, counting all classes together, are held by the trust.

Employees are divided into four grades, and each grade elects one trustee from amongst their own ranks, by ballot. The grades and the number of votes per trustee are as follows:

	Votes
Directors and divisional managers	28
Executive grades . . . . .	24
Supervisors and foremen . . . .	24
Operational grades . . . . .	24

Thus the trustee representing the directors and divisional managers can get his own way if he has the support of any one other trustee, but not if all three others are against him.

Only employees who have served for 3½ years with the company participate in electing the trustees and in the distribution of income, but if an employee retires after serving the requisite period he continues to qualify at the full rate for the next five annual distri-

butions, (if any), and after that at half rate until death.

It has been laid down in the trust deed that members of the same group share the trust income according to a scale based on length of service and position in the company, but that three-tenths of the amount distributed must go to those in the first two of the above groups, and seven-tenths to the last two groups. As there are naturally far fewer employees in the first two (executive) groups, this means that members of these groups have been deliberately given a larger share of the trust income, because of their greater responsibility.

Last November, £33,227 of trust income was distributed to 612 eligible employees. As typical examples of the individual amounts received, a foreman with 12 years' service received £55, while another supervisor with 21 years' service received £92.

## Employees Put Domestic Needs Before Share-Buying



**H**AVING reviewed a number of case histories, we will now consider the limitations within which an employee shareholding scheme must work. After that, we will endeavour to assess the particular conditions in which it can work most favourably.

First, it must be clearly understood that employees on the whole have no natural desire to buy company shares. In fact, company shares are about the lowest priority in their natural scale of preferences. An employee who has any surplus cash wants to spend it perhaps first of all on buying furniture or a home, or in educating his family, or buying and running a car. If he has any surplus after this, he will probably put it in a Savings Bank account, into National Savings Certi-

ficates, a building society or Government Bonds. The last item on his list of buying preferences will generally be company shares, because of the risks of fluctuation of both the dividends and the share prices. Even the shares of such "blue chip" companies, as Imperial Chemical Industries Ltd. gain or lose 50 per cent or more on their market price in the course of a year's trading on the Stock Exchange.

Only when an investor has very considerable resources does he feel justified in buying shares. Then he can spread his risks over a number of companies. But the employee who wants to invest in company shares is taking a very considerable risk if he puts all his savings into the one basket, particularly into the shares of his own

company. If the firm should do badly and he should have to seek another job, his savings will diminish in value at the very time when he needs them most.

Another disadvantage of putting his small savings into company shares is the high cost of brokerage and stamp duty. It is uneconomic for stock-brokers to deal in a lot of small parcels of shares, for which much the same work is involved as in large transactions. The total cost of brokerage and stamp duty on a small deal may be six per cent or more of the value of the transaction. By contrast, brokerage on Government Bonds is at a lower rate, and there is no stamp duty, while when a National Savings Certificate is purchased, there is neither brokerage nor stamp duty.

One further point. Company shares, or rather the dividends on them, are at a tax disadvantage as compared with National Savings Certificates. The three per cent interest on certificates is tax-free, and so for a person who pays the standard rate of income tax, this is equivalent to a taxable rate of nearly five per cent. But if an employee invests in company shares, the yield on a "blue chip" may not be more than four or five per cent, and yet tax is deducted at source, and paid by the company direct to the Inland Revenue.

When these facts are taken into consideration, it is hardly surprising that companies have to make very special concessions in order to encourage employees to become shareholders. Just to tell them that shares are available at market price, even on hire purchase terms, will not entice many to buy. Such was the experience with the Employees' Share Investment Scheme No. 2, started by Imperial Chemical Industries Ltd. in 1932. This enabled employees to purchase the company's shares at market prices, on an instalment payment plan. Employees were burdened not only with the full market price of the shares, but also with brokerage, stamp duty, and transfer fees. However, an employee could become possessor of the shares he applied for immediately his application was accepted, even though he had not paid for them. The cost of purchase was to be subsequently deducted from his pay by instalments, spread over a maximum of two years. No interest was charged by the company on its loans to purchasers, but the share certificates and a signed transfer form were held by the company as collateral until the cost of purchase was paid off.

The company have about 106,000 employees, but since 1932 there have

been only 864 applications under the scheme for an aggregate of £9,800 of Preference stock and about £39,000 of Ordinary stock. Looking at this scheme dispassionately, therefore, it can hardly be said to have been a great success, and it is not surprising that I.C.I. have since introduced another scheme, described in Case History 6 (January issue).

Case Histories 1 and 2 (December issue) describe the schemes run by Tootal Ltd. and Joseph Lucas Ltd. In both cases the employees are permitted to buy shares at par, but receive the full rate of Ordinary dividend on them, and this in fact has meant that the employee has been receiving 10 per cent or more interest on his money. However, when he buys the shares at par, he cannot then sell them again at market price and make a quick profit. He can only sell them back at par to the trustees for the scheme. He is thus able to get into the share market on very special terms and receive an abnormally high dividend on his savings. In addition, he has protection for his

but employees were brought into it indirectly through Sir Charles Colston's gift of shares to a trust fund. However, the Rugby Portland Cement scheme copies the Hoover principle, but applies it to all employees with a minimum period of service.

### Gift of Shares

Sometimes a scheme is created when a large shareholder, such as the founder of the company, donates a block of shares to the employees or to a trust on their behalf. One typical example is the scheme run by Hartley Fabrics Ltd. The late Mr. E. L. Hartley, former chairman of the company, donated in March, 1949, and subsequently, a total of 52,709 4s. shares in his company to an employees' trust. This trust then issued "units" to employees against the shares. At first the employees were allowed to sell their units back to the trustees, but so many of them did so that this was stopped, and they were then only allowed to sell to each other. More-

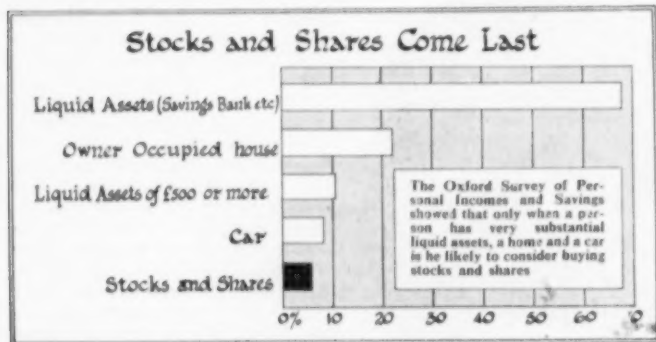
profits, and these profits will be invested directly in the company's shares, which will be passed on to employees whenever their credit account exceeds the value of £25 of stock. There is no restriction on re-sale of shares, and it remains to be seen how many employees actually hold on to their shares. One would normally expect, judging by the Hartley Fabrics experience, that quite a few will sell. If this happens, it will no doubt have some effect on the outside market price of the shares. Most firms would probably regard this as unfair to their outside shareholders, who had bought their shares in good faith, not expecting a depressed market to be caused by employees selling their shares. In the case of I.C.I., however, the scheme is on a fairly small scale and the company is so large and successful that the effect of employee share sales may well be negligible. Nevertheless, the scheme may be regarded as peculiar to I.C.I. and similar industrial giants. In its present form it cannot be considered as suitable for widespread application in industry.

Another type of scheme which might be considered for general application is that run by Standard Oil of Ohio, and described in Case History 3 (December). An employee is given facilities for saving a small percentage of his salary or wages, and investing his savings in the company's shares or Government Bonds. His savings are matched by a contribution from the company's profits. But if the employee withdraws his own savings from the scheme within five years, he cannot withdraw also the company's contribution.

In other words, the employee has an incentive to retain his savings in the scheme. Also, in the United States a tax concession is gained by remaining in the scheme. However, the Ohio scheme has one important disadvantage. Voting rights attached to the employees' shares belong to the trustees of the scheme. This no doubt protects the outside shareholders and the board of directors against employees gaining a major stake in the business and exercising powerful voting rights.

It will be recalled that in the Wadlington scheme, described in Case History 8, an employee who leaves the firm loses his shareholding, which is redistributed as part of the next bonus to other employees. Another feature of that scheme is that the employees elect a director, even though the shares they hold normally carry no voting rights. Likewise in the Kalamazoo scheme, described in Case History 9,

*Continued on Page 154*



savings, due to the fact that he can sell back to the trustees at the price he paid.

These are very successful schemes, and they attract thousands of workers to become shareholders. However, one possible criticism is that they do not give the employee a realistic picture of industrial investment, its risks and rewards. The employee is treated as a very privileged type of shareholder. He may deserve this special treatment, but it may give him a misleading impression of business finance.

A similar comment may be made on the Hoover scheme described in Case History 3 (December) and the Rugby Portland Cement scheme described in Case History 7 (January). The Hoover scheme provides key executives with an exceptional rate of dividend. The scheme was, of course, frankly intended as an incentive for top executives,

over, Mr. Hartley's original donation was 22,000 shares, and he later encouraged employees to hold on to their units by making some of his subsequent donations proportional to the number of units already held by employees. Even so, the price of units being bought and sold between employees was depressed below the outside market price. But as the employees' share units were not saleable outside, the two separate markets did not interfere with each other. As this type of scheme is dependent upon the initial generosity of some large shareholder, it cannot be considered for widespread application in industry.

A type more suitable for widespread application is that introduced by Imperial Chemical Industries Ltd., and described in Case History 6 (January). Under this scheme employees will share

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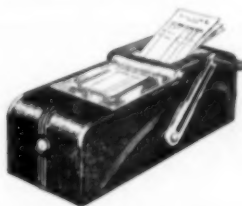
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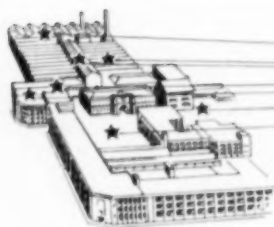


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*These sketches—illustrating the composition of the departmental committees (right) and the works advisory committee appear in a booklet available to all employees*



## How to Get Good Results from JOINT CONSULTATION

By MICHAEL MELLOR

THE management of N. Corah (St. Margaret) Ltd., hosiery and knitwear manufacturers, Leicester, were thinking of the future when they introduced a joint consultation scheme. Certainly they believed in the day-to-day value of exchanging information with their employees, and already encouraged this practice on an informal level—but their new scheme was not inspired by an over-optimistic idea that joint consultation would produce spectacular results as soon as its machinery was set in motion. In effect they had told themselves: "If we manage to get things going in five years we will be making pretty good progress."

As their scheme was launched in 1950, this is an opportune moment to examine its growth and see how the management's original ideas have materialized.

In one respect, good joint consultation schemes are like icebergs: much of their weight is below the surface. It may be said, however, that the visible portion of N. Corah's scheme is quite substantial. The machinery—a works advisory committee and 11 departmental committees—is running smoothly and its influence is increasing. From the committee meetings has already emerged a number of con-

structive recommendations, many of which have been adopted.

The company's executives are not complacent. They avoid extravagant claims, take an unusually candid view of their scheme's shortcomings and disappointments—but are confident that more impressive results will emerge during the next five years.

In 1950, the management appreciated that setting up an electoral system and a group of committees was comparatively simple—a mechanical act of organization. More important, and much more difficult, were the problems of (1) explaining to their employees the real purpose of the scheme; (2) overcoming the scepticism and resentment with which some workers might regard its introduction; and (3) encouraging them to make use of it in

Setting up a joint consultation scheme is fairly simple: the real problem is to persuade all employees to trust and make full use of it. Experience of N. Corah (St. Margaret) Ltd. over five years reveals how the right approach by management can establish the system on firm foundations.

a constructive and co-operative manner.

These are problems which affect all joint consultation schemes. In some cases they are handled less satisfactorily than the "mechanical" problems, a fact which is used as ammunition by people who maintain that joint consultation is a sensitive (and over-admired) plant in the hard climate of industry.

Not that many schemes are imperilled by direct criticism: the real enemies are faint praise—and the faint enthusiasm of the people who run them. One recalls in this respect a significant passage in a survey of more than 700 schemes by the National Institute of Industrial Psychology: "The amount of support by individuals declines from the rank of chief execu-



*Matters which affect either working efficiency or the employees' comfort are discussed by the works advisory committee. Many of the committee's recommendations during the past five years have been adopted successfully*

tive, through successive stages of management, to the rank-and-file, only about 40 per cent of whom express active support. Active resentment is rare; the remaining 60 per cent are passively acquiescent . . .

Executives of N. Corah have made vigorous efforts to avoid this state of affairs. Recently they have adopted, with considerable success, an idea which gives ordinary employees the chance of watching joint consultation "in action." At each W.A.C. (works advisory committee) meeting, the elected committee is supplemented by between 10 and 15 guests, all of whom are regarded, for a couple of hours, as full members—which means that they are entitled to take part in the discussions or ask questions on any subject. Some attend at their own request, a practice which is encouraged; others are selected by individual committee members. One advantage of this idea is that it allows the committee to bring into the open the scepticism or suspicion with which a few employees regard the scheme.

In addition, the management have vigorously put into effect their belief that the scheme's success depends, at least during the development period, on top-level leadership and inspiration. Experience has taught them that the employees will discuss a variety of subjects in an uninhibited manner—if management supply an agenda in the first place. Throughout the past five years they have appreciated the importance of encouraging the employees' representatives to produce ideas on their own accounts; but they have also appreciated the dangers of expecting too much and trying to go too quickly.

These efforts have been facilitated by the fact that joint consultation has

grown organically from a spirit which was already in existence. The firm has its roots in the early part of the nineteenth century, and retains, even now, much of the characteristic "atmosphere" of a family business. At all times a frank exchange of information between management and workers has been encouraged. The introduction of a formal scheme is in no sense a radical change in the company's outlook.

Nor is joint consultation the lonely outlier of an army of "scientific" methods. Other important developments have been taking place at the same time. During the post-war decade, the company have introduced a number of schemes which concern directly the efficiency of their opera-

tions and the wellbeing of their employees. Among the new facilities are a training centre in which young recruits spend three months before being placed in the main works (and which, incidentally, is regarded as a "model" by many sections of the hosiery and knitwear industry); a system of quality control which also helps to improve the performance (and piecework earnings) of individual workers; a work study department; and a non-contributory "security through service" scheme which provides additional sickness benefits for employees with more than five years of continuous service.

These schemes are an important part of the background against which joint consultation has developed—and indicate that the company's efforts to improve the efficiency of their organization are based on much firmer ground than a belief that joint consultation acts as a panacea (or even a soporific). They are also subjects which have been discussed very thoroughly at meetings of the works advisory and departmental committees.

Before putting their plans into operation, the management investigated a number of existing joint consultation schemes. Learning from the experience of other firms, they were able to draw up a provisional constitution which suited their own circumstances and could be adopted as soon as the first set of committees had been elected.

Over the works intercommunication system, a director explained the scheme's stated aims:

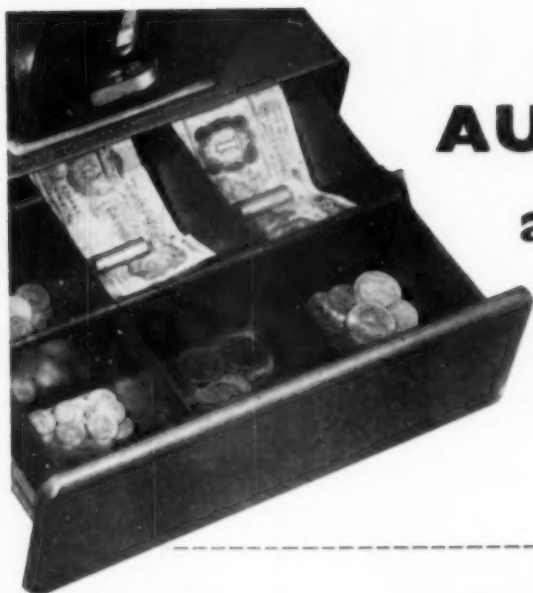
- 1—To provide a direct channel of communication between employees and management.
- 2—To provide machinery for joint consideration of such matters affecting employees as may arise in the works.
- 3—To provide a means for constructive co-operation in obtaining greater efficiency and the greater comfort and well-being of those employed by the company.

Notices were then displayed in all departments, outlining the main features of the electoral system and inviting nominations. The introductory procedure worked smoothly, and the constitution today is virtually the same as it was in 1950.

At its heart is the works advisory committee. This has 16 members: five represent different grades of management, the others represent employees in the 11 constituencies into which the works has been divided. All

### Four Points In Corah's Scheme

- 1—All committee members—whether employee or management representatives—are elected by secret ballot.
- 2—"Ordinary" employees have an opportunity to attend works advisory committee meetings as co-opted members.
- 3—Each meeting has a full agenda, including a clear-cut "item for discussion" and an educational talk.
- 4—Results of discussions are publicised through the company's journal, works' notice boards and special "white papers".



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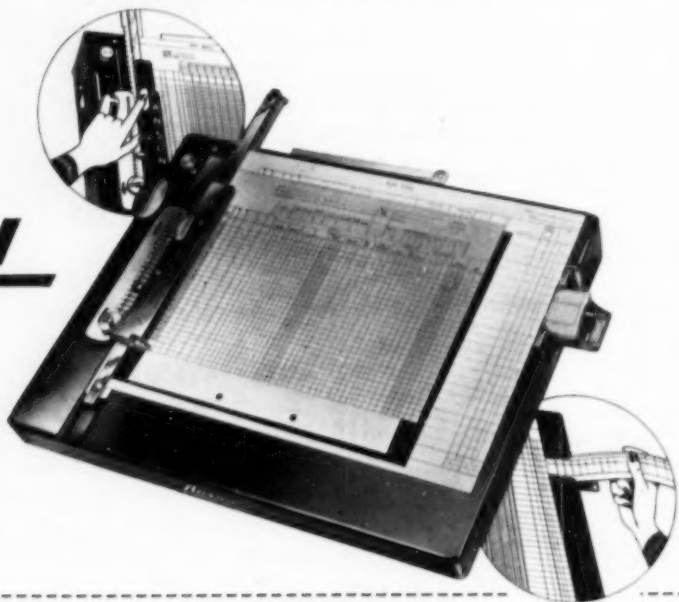
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are elected by means of a secret ballot.

The electoral division of the works aims to provide numerically equal representation in all cases—there are more than 4,000 employees—and for voting purposes the smaller departments have been amalgamated or incorporated in others.

In addition to its elected members, the W.A.C. has a management-appointed chairman and a permanent secretary (who is the personnel manager). One of the employees' representatives acts as an *ex-officio* secretary.

The committee meets for two hours every month in works' time, and its function is to discuss general matters affecting the progress and efficiency of the factory. There is no voting: after discussion, the committee may submit recommendations for consideration by the management. One of the rules specifically excludes from discussion any matter which is likely to become the subject of an agreement between the company and the trade union.

Minutes are circulated to the board of directors, departmental managers, all members of the W.A.C. and members of departmental committees. An outline of the business conducted at each meeting is posted up on the works notice boards or published in *Encore*, the company's quarterly journal.

The composition of each departmental committee depends on the size of the department. The manager acts as chairman, and may include, at his own discretion, a representative of the foremen or overlookers. A member of the personnel department attends each meeting.

### Election Rules

Meetings are held monthly in works' time, and their duration is generally limited to one hour. The accent, of course, is on more parochial matters than are brought up at W.A.C. meetings. There is no voting, but departmental committees may submit recommendations either directly to the management, or for consideration by the W.A.C.

In all cases, annual elections are held. W.A.C. members serve for a period of three years; "continuity" is preserved by the fact that one-third of them retire at the end of each year. One modification of the original rules is that a retiring member is ineligible for re-election for a period of 12 months. This has been made to encourage new blood, and to avoid giving the impression that the W.A.C. is always composed of the "same old gang." Departmental committee members hold office for two years,

one half of them retiring annually.

All adult employees with 12 months' continuous service are eligible to serve on either the W.A.C. or one of the departmental committees. But the rules prescribe—for an obvious reason—that each nomination must be supported by at least 10 employees in the electoral area concerned. Management representatives on the W.A.C. must have 12 months' continuous service in the grade of management for which they are nominated.

The ballots are absolutely secret: employees indicate their choice on a voting slip which bears only the candidates' names. These slips are distributed personally by the returning officer, and are collected almost immediately afterwards. Adopted in favour of a more formal polling-booths system, this practice ensures a 100 per cent poll, but avoids prolonged interruption of the departments' work.

So much for the structure of the organization; the aim has been to combine simplicity with a completely democratic system of representation. More important is the manner in which the organization is used.

### Discussion Items

Following the principle (confirmed by experience) that management must guide and stimulate, the chairman and secretary make sure that the agenda for each meeting of the W.A.C. includes a strong, clearly-defined "item for discussion." These items cover a wide field and give members, either directly or indirectly, an opportunity to discuss practically all matters which affect the company's work.

Among the items which have been discussed by the W.A.C. during the past 12 months are:

- 1—Are we satisfied with our present method of booking work?
- 2—How can we make people more accident-conscious and what additional preventive measures can be introduced?
- 3—About half the leavers in any one year have been with the company under 12 months. How can we improve on this?
- 4—How can we increase the flow of production and despatch in order to cut down work in progress in the factory departments and finished stock in the warehouses?
- 5—How can I help my supervisor—and how can my supervisor help me?
- 6—Is joint consultation really successful, and how can the system be improved?



*All employees are encouraged to study their jobs and put forward suggestions for increasing efficiency. This picture shows the production of fully-fashioned nylon hose.*

Most of these ideas have emanated from the management. To encourage the employees' representatives to put forward their own suggestions, the "item for discussion" at a recent meeting was simply—"items for discussion at future meetings." This produced more than 30 suggestions, which have now been reduced to a list of about ten "strong" subjects. Significantly, most of them are concerned with working efficiency, rather than the employees' own amenities.

At each W.A.C. meeting, the committee selects an item for its next discussion. In many cases, the same item is discussed beforehand by the departmental committees. Thus W.A.C. representatives obtain plenty of material from the committees' minutes, and this part of the meeting has none of the awkward pauses which characterize some "spontaneous" discussions.

From this material the management often obtain information which might not come to their attention in any other form. During the "supervisor" discussion, for example, several departmental committee members were quoted as having said: "With more information there would be more co-operation." On the other hand, a general comment that "supervisors should do such-and-such a thing" may reveal, unconsciously, a departure from works practice in the department in which its originator is employed: the management have at least the chance of judiciously investigating.

The outcome of these discussions is not buried in the minutes. In some

cases, a digest is posted up on the notice-boards; in others, the main conclusions are published in *Encore*, or even as a "white paper." They are also passed to the appropriate quarters for further consideration; the "supervisor" item, for example, was subsequently taken up by the supervisors' own discussion group.

A part of each W.A.C. meeting is devoted to an educational talk, either by a member of the company or by a guest-speaker. Recent subjects have included:

- 1—Work study
- 2—The training programme
- 3—Quality control
- 4—The production of yarn
- 5—Overseas trips by executives
- 6—Civil Defence
- 7—Blood transfusion services.

One "regular" is the annual accounts. These are explained (and subsequently discussed by members) as soon as the annual report has been issued.

### *"Co-opted Members"*

Thus every meeting has a definite "shape." At the beginning, the chairman welcomes the guests and asks them to state their names, jobs and length of service; he also emphasizes that they should regard themselves as co-opted members of the committee for the duration of the meeting and invites them to join in the discussions. (All guests, like the elected representatives, are paid at their average rates for the time which they spend at the meeting).

After the minutes have been read and agreed, and the committee has dealt with any matters arising from them, the chairman briefly reports on the state of trade as it affects different departments. Then follow the educational talk and the "item for discussion." Finally, the committee discusses any other item of general works interest which has arisen during the month.

Despite the progress which has been made, the management hold the view that the system has yet to obtain its full stature. The old enemies are still there: apathy, suspicion and even resentment (although this, certainly, is rare). Whether they will be eliminated is problematical. But their influence is weakening, a fact which is demonstrated by the number of employees who wish to attend W.A.C. meetings, and by the general trend of the discussions, and the management are confident that the system will make significant contributions to efficiency.

## These Foremen Are Trained Within the Company

By PHILIP CAISTOR

**A desire to widen the interest of their foremen in the many activities of the company prompted Hadfields Ltd. of Sheffield to start their own training scheme. By drawing lecturers from within the company for one-week residential courses and continuation classes, they have achieved a "family" atmosphere in the works which has resulted in better inter-departmental relationships and improved efficiency on the shop floor.**

A NUMBER of the steel and engineering companies in the Sheffield area, like many others throughout the country, have been quick to take advantage of the very good training courses now available for supervisory staff. However, the management of Hadfields Ltd., Sheffield, felt that, in addition, it would be advantageous if their foremen—who number more than 100—could also be given a wider understanding of the activities of the company of which they were members.

The company manufacture high quality steels from the raw material to the finished product in the form of bars, billets, castings and forgings for the engineering and mining industries, and export them to many parts of the world. It was therefore felt that an interesting syllabus could be devised, aimed at securing a fuller appreciation of each individual's own part as a member of the company team, and also designed to achieve better use of the four "M's"—men, materials, methods and money.

Courses have been held as winter sessions since 1952, and have been so successful that the system has been adopted by other companies. It is proposed to describe here the first series of courses held. The training scheme was administered by a com-

mittee of the company's local directors, each with departmental or divisional responsibilities, and a director of the parent company acts as chairman. The first part of the course was a residential one of five days' duration, held away from the main producing works in each of three consecutive weeks. The company was fortunate in that suitable accommodation and facilities were available at their smaller Hecla Works, some little distance from their East Hecla Works, and it was thereby possible to isolate completely the members of the course from their normal duties.

All the lectures were given by the company's local directors and senior staff members. Each speaker, as a specialist in his own particular subject, was responsible for conveying how his divisional responsibilities dovetailed into the overall activities of the company. A senior member of the company's personnel department acted as chairman throughout both the residential courses and the continuation courses that will be described later.

Ten foremen was the maximum number that could be taken on the residential course at any one time, their selection being carefully planned to avoid undue disruption of departmental activities. The five-day programme was arranged to allow for 11



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periods of approximately 1½ hours each which were devoted to lectures and discussion, the remainder of the time being used in visiting various production departments. Apart from affording an opportunity for the foremen to see departments and sections other than their own, these visits also removed any danger of "mental indigestion." Additional variety was provided by a film session held in the company's own cinema room; the films shown including one of the general activities of the company, and one illustrating the use made of their products by other industries.

The residential courses were followed by a continuation course, the sessions for which were held during the afternoons of two days each week for a period of six weeks. The three groups, each of ten foremen who had attended the residential course in turn, were combined to attend the continuation course.

At each of the residential sessions, the first 50 minutes or so were allocated to the lecturer, who then retired with the chairman for a period to allow time for group discussion of the subject. On their return, questions were presented through an elected group leader, who was not necessarily the same person at each session. A similar procedure operated for the continuation sessions, except that opportunity was given for the group of 30 to subdivide again into the original groups.

The following subjects were covered during the residential course, and are given in the sequence of their presentation:

*The organization of Hadfield's Ltd.*  
*The foreman's part in management*  
*Labour relations*  
*Works records and statistics*



*Specialist lectures are given by directors and senior staff members*

*The foreman as supervisor*  
*Sales organization (general)*  
*Costing as an aid to control*  
*Sales organization (works)*  
*Traffic organization*  
*Research and development*  
*The foreman and the Factories Act*

The subjects covered in the continuation course included:

*Our subsidiary companies*  
*Raw materials*  
*Budgetary control*  
*Control of costs*  
*Increasing productivity*  
*Service to the customer*  
*Planning and progress of production*  
*Research and its application to production methods, quality and service*

The visits to various sections of the works were concentrated upon processes in which the foremen were personally interested, so that each in

turn could enjoy the opportunity of showing his colleagues his daily duties and responsibilities — an experience which was found to be very popular. The visits covered the steelmaking plant, rolling mills, forges, hammer shops, foundry and machine shops, with a full half-day devoted to the research departments.

Enclosed with his copy of the syllabus of the course, each foreman attending received a personal letter of invitation from the managing director of the company, and the following extract indicates the spirit in which the foremen commenced their studies: "The courses have been designed so that the atmosphere will be friendly and informal, and I am anxious that you join in the discussions without any feeling of restraint, since it is only by free expression of opinion that the greatest benefit will accrue . . . The dependence of every one of us on each other as members of the team of Hadfield's is . . . a governing principle." It can be said that informality was indeed the keynote of the courses and new friendships were developed which will have lasting duration and benefits.

Each course has been concluded on a happy note by directors, executives, lecturers and members of the course all taking tea together, when an opportunity was given to group leaders to convey, on behalf of their members, their impressions and recommendations. Comment was invariably appreciative and the organizing committee felt that their objective of broadening the outlook of the individual, and thereby cultivating a more active team spirit within the company, had been considerably advanced.

### **5 Points in the Hadfield Training Plan**

- 1—Foremen attending a course are released from their duties—and from their normal working surroundings
- 2—The number released for training is never so great as to impair the efficiency of any department
- 3—All lecturers are drawn from within the company
- 4—The syllabus is designed not only to make a foreman proficient in his own work, but also to give him an insight into that of other departments
- 5—A continuation course maintains interest as well as providing further training





*Job slips are produced on the spirit duplicator from pre-printed master copies. Each row on the production control boards represents a machine, and a complete picture of production progress is seen at a glance*

# They Planned Their Methods for Expansion

By JOHN A. ASH

THE business of Clarkson (Engineers) Ltd., of Nuneaton, manufacturers of Autolock and Dedlock milling chucks and cutters, was expanding rapidly in 1950. The management wished to ensure that the business should continue to grow, if possible at an even faster pace. They realized that, to achieve this aim, the lead they had obtained in their particular field must be widened, and the company must be prepared to meet competition in a buyers' market.

Accordingly, certain clear-cut policies were adopted. These involved: First, a really good service to the user. He does not maintain large

stocks of cutters, nor does he wish to order standard tools in advance of his requirements, but expects to get delivery by return. This meant the installation of efficient stock and production control systems. Second, the service must be direct, maker to user, eliminating middlemen. Such a service involves handling a large number of orders of only small sales value. Cost of handling each order must be kept to a minimum. Therefore office efficiency must be increased and office costs reduced. Third, a realistic price structure must be adopted, based on costs, in place of prices fixed by the trade. As lower prices would make

It is not uncommon for firms to reorganize their factory and plant layout when preparing for expansion. But it is unusual for a medium-sized firm to adopt office methods suitable to a larger company, before the immediate necessity for such a step has arisen. Clarkson (Engineers) Ltd. of Nuneaton, who were expanding rapidly in 1950, called in consultants to help lay the administrative foundations for a programme of greatly increased sales at reduced prices.

for greater competitiveness, proper cost control was vital.

With these principles in mind, Clarksons reviewed their organization and concluded that whilst their existing methods were suited to the medium-small size firm, and were quite adequate for their immediate needs, if they were to expand over the next few years steps would have to be taken to lay the foundations of new methods and systems which could be built upon as they grew. In February 1951, they called in consultants to help them in this replanning.

After considering the company's requirements, the consultants spent a day looking round the offices to see if it was the type of firm they could help. They decided that they would take on the job and, as requested by the management, would pay special attention to production control, costing and invoicing. An approximate estimate for a complete consulting service was given, and work started immediately.

At the outset, it was agreed that the secretary of the company would "sit in" with the consultants during the whole of their work, to act as a liaison between company and consultants and to advise on matters of company policy that arose during the investigations. The first stage in the consultants' survey involved tracing all office func-

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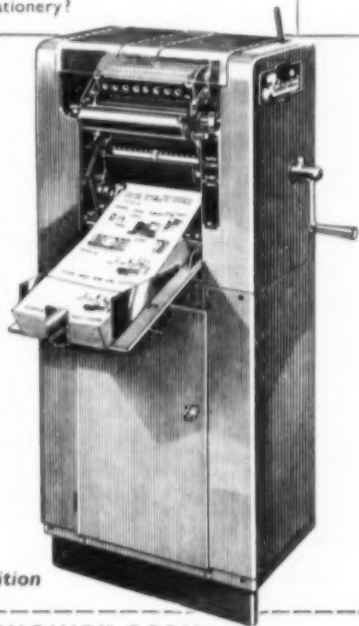
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BUSINESS

tions. The wages, invoicing, works orders procedures, etc., were tracked from start to finish.

The clerical staff were put in the picture, and asked to give every piece of information they could. They were also asked to explain to the consultants any personal systems they had adopted to help them in their work. The consultants sat with each clerk for a whole working day, during which he (or she) described his work as he did it. Occasionally the consultant would interrupt and ask general questions about the work. They asked if certain forms were always handwritten or typewritten, how often the forms were passed to the next stage, or simply, "Why did you do that?" If, as a result of these questions, a snag arose, or the question was beyond the clerk, then the company's representative was always there to explain. The stock control, costing, production control, accounting methods, office layout and works clerical procedures were all scrutinized from A to Z.

After this "first stage" survey the consultants sent in a report of their findings. They pointed out faults in organization and methods, and submitted their recommendations. With the recommendations, a more precise estimate for the cost of the work was given, together with a list of facilities and new equipment they would need to carry out the recommendations if approved. The new equipment suggested was as follows:

- 1—Production control boards
- 2—Re-designed stationery
- 3—A spirit duplicator
- 4—Punched card equipment.

For the first three, no specific brand names were mentioned, but the consultants drew up a list of types of equipment which would be suitable for the new methods. The final choice was left to the company.

### *Finding the Man*

They also suggested that the works administration should be strengthened by the appointment of a works manager to co-ordinate production planning and the execution of those plans. The management accepted this recommendation and asked the consultants to find the right man for them. The consultants did all the advertising and interviewing for the new manager, and gave a short list to the management for the final selection.

Also at this stage, it was suggested that if the firm's expansion continued at its present rate, the need for punched



*This second-hand punched card equipment was snapped up before it was really needed, and office techniques were planned for expansion accordingly*

card equipment would be inevitable in a few years. Continuing their "look ahead" policy, the management decided to purchase punched card equipment at once, and start a system on which they could build as they grew. Luck played a part at this point, for at the time, there was some second-hand equipment available which suited their purpose. This accounted for the addition of the fourth item of new equipment. By following the consultants' advice in their purchases, the capital outlay involved in new equipment was less than £1,000.

The overall estimate for consulting fees gave the number of consultant-days (one consultant for one day) which the changeover would involve, and the length of time the programme would take to complete. It was an "all inclusive" estimate, taking into consideration even such items as consultants' meal allowances, travelling expenses, etc.

It would be as well to point out at this stage that no changes were effected before this "stage 1 report" — only recommendations were submitted for approval. Once approved, there was much groundwork to be done by the company's office staff.

For example, with the new production control system, each working instruction for their 2,000-odd products had to be typed on a master copy for use with the spirit duplicator, so that

when a production order had to be issued, the relevant instructions could be duplicated from the masters on to the job slips, etc. As some of the products involved as many as 30 working operations, the groundwork was prodigious.

### *Gradual Change*

Therefore before each stage of the recommendations was implemented, there were periods when the consultants stayed away from the firm, to allow the preparatory work to be completed. There was no precise D-day when all old methods were dropped and new methods started. The process was gradual; as one recommendation was being carried out, so work commenced on the next. And as one stage was completed, so the consultants sent in a report on it. These reports gave complete details of the new methods, including the layout and the uses of the redesigned stationery. They now form a permanent check on the working of the methods, and any deviation from the course recommended can be traced immediately.

The chief recommendations concerned production control, cost control, invoicing and stock control methods. The new system of production control, by using a spirit duplicator with master copies of all permanent data, has practically eliminated all



*The consultants spent a day with each member of the office staff, so that they could trace every function from A to Z*

copying work and resulted in a satisfactory method of machine loading using production control boards. It has also helped to achieve an accurate progressing system, as the production departments are given a very close working schedule. It also gives the basic information for a wage incentive, and ensures that goods are in stores when needed.

The systems of standard costing and flexible budgetary control which have been adopted provide a yardstick by which efficiency can be measured, and detailed cost information is available for use in fixing selling prices.

### *Invoicing*

On the invoicing procedure, certain terms of reference were given to the consultants, among which were these: first, it was essential that they should be able to maintain adequate stocks of the necessary cutters; second, a system should be devised for rapidly translating the customers' orders into cutters ready for immediate despatch; and third, there should be a minimum of delay between the receipt of goods by a customer and the delivery of the

invoice for them. It was also considered essential that the new system should not involve increased expenditure on clerical methods, as this would invariably lead to an increase in selling prices.

After considering all these requirements, the consultants suggested a scheme based on a combination of mechanization and simple handwritten methods, allied to a stock control system using punched cards. The new stock control system took into account such factors as demand trends, orders for future delivery and work in progress.

A form for two-part analysis was designed to reduce the amount of writing involved on receipt of an order. As soon as an order is received it is analysed and a packing note and package label are produced in one operation. The packing note provides the necessary instructions to the despatch department, and the label is used for the package containing the order.

Immediately this two-part analysis is completed, the cutters can be selected and despatched. The packing notes are released to the despatch department in batches and the cutters required are packed and despatched by

the next post. It is now possible to send off an order by mid-day even though it was only received the same morning.

Each customer has his own name and address punched cards, and pre-punched cards are kept for each product. From these the invoices are prepared. Once prepared, the necessary adjustment to the stock control records is automatic. A punched card is instituted for each item covered by the order and becomes the prime record of the transaction. In addition to the preparation of the invoices, the punched cards are employed for the tabulation of weekly stock movements, on which the stock control procedure is based; for the provision of sales analyses by area, customer and product; for the preparation of representatives' commission statements; and for the provision of a sales day-book record. From the latter, weekly sales details cards are made up, and these provide the necessary information to enable effective control to be exercised over many functions of the company.

From the same sales detail cards can be determined the quantity of each particular cutter sold during the week. First, the cards are mechanically sorted into "part" number sequence. The tabulating machine then provides a summary, which shows the number of cutters of each particular type and size, which have been sold during the period in question.

The punched cards are also used to prepare weekly stock tabulations, and in addition the cards may be used as a cross-check on the number of products sold. The same set of cards is also employed in standard cost evaluation, and in the rendering of monthly accounts.

### *Fewer Errors*

In the three years since the new methods were introduced, errors in invoicing procedure alone have been reduced to less than 0.125 per cent. During this period, Clarksons have continued to expand; but it is significant that, although the volume of work has substantially increased, it has not been necessary to add to the office staff.

The management of Clarksons say that if further expansion takes place, they will not hesitate to call in the consultants again, just to make sure that they are keeping abreast of developments. The prime task of the consultants was not to lay down an ultimate scheme, but to devise one which could be built on as necessity demanded.



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# Putting New Staff 'In the Picture'

By KEITH UNDERWOOD

Girls joining the staff of Reckitt and Colman's head office at Hull attend a special induction course after they have been there three months or so. Main advantages of this "delayed" system are: (1) The girls are able to absorb more information about the company and their part in its operations; and (2) the women's staff officer is able to correct any false ideas and assess the girls' progress.

WHEN a company employs a large number of young clerks and typists, the value of a well-planned staff induction course is indisputable—although much depends on the tact and perspicacity of the executives who run it.

Assuming that the arrangements are planned and handled satisfactorily, an induction programme has several advantages. It gives the new employees a balanced picture of the company's administration and methods. It prevents (or at least minimizes) any feelings of uncertainty which may arise during the first few months of employment in a large organization, and which may insidiously affect other members of the staff. It informs the employees that they have joined a company in which efficient work is both expected and recognized. It implies that the management regard even the youngest members of their staff as Quite Important People.

Where induction training is given during the first week of employment (as is usually the case) these advantages may be offset by the fact that employees are being asked to absorb a considerable amount of general information before they can assess its full significance in relation to their own jobs. School-leavers especially may be so bewildered by their surroundings that only the more superficial elements of the programme make any real impression.

For this reason, Reckitt and Colman Ltd. of Hull have adopted a "delayed" induction system. The girls who take part in it have already worked in the

offices for three months or so. They approach the scheme in a more receptive frame of mind than they would have done at the beginning of their employment, and, in fact, are able to play an active part by describing the duties and purpose of their own jobs.

Thus, the scheme provides a two-way exchange of information: the girls learn from the supervisor, and the supervisor learns from the girls. If a girl is making insufficient progress or is developing false ideas about her work, this fact emerges, and the supervisor can talk with her privately after the course has ended.

The scheme, which has been in operation for some years, was originated by Miss Ruby Pickles, the women's staff officer. Miss Pickles plans and conducts the courses herself, but relies on the co-operation of departmental heads in obtaining much of her new material. She, in turn, co-operates by arranging the courses at times which

cause the minimum amount of inconvenience to the departments from which the girls are drawn.

The scheme's aims are simple: (1) to explain to the girls their real position in the organization; (2) to show how their jobs, even if apparently trivial, are linked with more important matters; and (3) to improve generally the standard of their work.

At their head office at Hull, Reckitt and Colman employ approximately 350 women and girls. The working conditions are good, and a large proportion of the new employees remain with the company for many years. Whenever possible, the company fill the more important posts through internal promotions; thus the majority of the newcomers are, in fact, girls who have only recently left school.

On joining the company, they are placed in their jobs immediately: departmental supervisors are responsible for seeing that they settle down satisfactorily. During the first few weeks, however, the newcomers are shown around the works in small parties.

As a rule "initiation" courses are held four times a year, summer holiday and other busy periods being carefully avoided. Each course is attended by about 12 members of the junior staff, representing, in most cases, all departments concerned in the flow of work. In addition, four or five more senior women employees (who have joined the company within the past few months) participate in the opening session.

The course is divided into three sessions. These are invariably held on Monday, Wednesday and Friday of the same week, from 2.30 p.m. to 4.30 p.m. This spread-out timetable means that the girls have a chance to catch up on their work between sessions—and also to digest the information which they have already received.

Of psychological importance is the

**IMPORTANT—BUT NOT TOO FORMAL:** Reckitt and Colman believe in capturing the right "atmosphere" during their staff induction courses



fact that all sessions are held in the company's conference room. Each girl is identified by a card bearing her name and the name of her department. Thus the girls are at once given the impression that they are being treated as adults, and that the course has to be taken seriously, rather than regarded as a diverting interlude in the usual routine.

Nevertheless, the formality of the occasion is not overplayed. One of the scheme's advantages is that it brings together girls who may seldom meet in an organization of this size, especially as the offices are situated on four floors.

The information which the course provides may be divided, broadly, into five categories:

- 1—General information about the company—its history, traditions, products and subsidiaries.
- 2—Specific information about its structure and the manner in which the work is organized, emphasizing that all jobs in all departments are inter-related.
- 3—Advice on the main aspects of junior clerical work—filing, typing, answering the telephone, etc.
- 4—Advice on personal behaviour—deportment, posture, manners, clothing, etc.
- 5—An outline of the company's welfare, recreational and educational facilities.

In practice, these categories overlap and intermingle. Miss Pickles believes that monotony must be avoided at all costs, and each session has a balanced programme. New material is introduced regularly, and the girls are unable to anticipate the complete programme by questioning older colleagues.

Much use is made of visual presentations. While the company's capital structure is being explained, for example, the girls are shown specimen share certificates. "Imitation" packs produced by foreign firms arouse interest—and emphasize the value of the company's reputation. But examples of bad work (incorrectly-addressed envelopes, badly-typed letters, etc.) are invariably obtained from the *incoming* mail: criticism of junior staff is avoided, especially while the senior employees are present.

Although the programmes vary, the following description indicates the manner in which they are compiled and presented.

At the opening session, Miss Pickles introduces the course by describing its

objects and by emphasizing that it has the full support of the directors. Available for inspection is a collection of dummy packs. Not all the girls appreciate that Reckitt and Colman make so many household and pharmaceutical products, and this display brings to their attention the variety of the company's activities. A number of special export packs is included; these arouse the girls' curiosity and also emphasize another important aspect of the business.

An outline of the company's development is augmented by reading selected extracts from a recently-published history. The functions of the various committees are described briefly, and from here the introductory session turns to the activities with which the girls themselves are associated, following the flow of work from the post department to the shipping office, etc.

Emphasis is placed on the fact that junior employees are continually handling important business—one delayed or misdirected letter may have serious consequences, examples of which are given.

### *Less Formidable*

To illustrate the operations of the invoicing department, a set of punched cards is produced. These bear the names and addresses of film stars—a detail which helps make the cards less formidable to the uninitiated! It is pointed out that small errors in the preliminary stages are multiplied at an alarming rate by office mechanization.

Also described are the functions of the more specialized departments, including the personnel department, the welfare department and the staff library. A short description of the manner in which the company's products are costed again emphasizes the importance of accuracy in every phase of the work.

After the tea-break, the senior "contingent" describe their own jobs. They produce specimens of their work, having been "briefed" in advance by the staff officer.

The last half-hour or so is devoted to questions and this, of course, provides an excellent opportunity of assessing the girls' attitude not only towards their own work but also towards the company as a whole. Officially, the session ends at 4.30 p.m., but the seniors are encouraged to remain for more advanced discussion after the younger members have gone.

By Wednesday the group, now composed only of junior staff, is well established. On this occasion the

emphasis is on practical advice: shorthand "drill," telephone manners, filing methods and similar subjects are described briefly.

Then follows some advice on personal behaviour. The girls' attention is drawn to the more irritating office "habits," like chewing pencils, humming and tapping on desks. In this respect the staff officer is in a better position to give advice than departmental heads. At the same time, the girls are warned that they should not resent personal criticism on any subject—and once again the company's promotion policy is emphasized.

The importance of "correct" dress is stressed by passing round a set of illustrations prepared by the art department, in which common "faults" are caricatured slightly but not unkindly. No comment is made; the girls are left to draw their own conclusions.

On the subject of discipline very little is said. Miss Pickles merely points out that what the company look for is self-discipline.

After a short break, six of the girls are asked, in turn, to describe their jobs. Miss Pickles encourages them to speak freely, avoids correcting them wherever possible, and only intercedes when it is necessary to clarify their remarks. During this part of the proceedings, she obtains a very good idea of the amount of knowledge which individual employees have managed to pick up in their first three months.

The session concludes with more questions, and with a talk by the youth club leader on the club's activities, the holidays abroad scheme and the company's sport facilities.

The final session opens with more advice on specific aspects of the girls' work, including typing (how to handle carbons without soiling the fingers, how to sit correctly, etc.) and filing. A number of general points are covered: timekeeping, tidiness, willingness to accept other jobs if occasion arises, and teamwork.

Later the girls discuss their hobbies and there are more questions. Information is given on office machines and methods, the cost of stationery, and allied subjects. Finally, the other six girls describe their jobs.

The cost of running these initiation courses is quite low—no more, in fact, than the cost of the "lost" time which they involve. As for their value, it is clearly impossible to give quantitative results. But the company's experience during the past few years has shown that the "influence" on other employees of the girls who take part in them is by no means inconsiderable.



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## Electronics in the Office

The Editor, BUSINESS  
Sir,

I have read with interest the article by Peter Spooner in your November issue on the subject of "Electronics in the Office." I have been closely associated with this subject for 20 years as a designer and manufacturer of computers, and feel qualified to make the following observations.

For some months now, I have experienced difficulty in finding sufficient time to read the numerous articles in the national and technical Press on electronic computers, including the official publication entitled "Automatic Digital Computation." With the exception of the latter, I believe the general impression given to the layman, the possible user, leaves a lot to be desired.

It is appreciated that the shortage of labour and its increasing cost will force even those opposed to mechanization to mechanize, but only if the utmost reliability can be assured. According to the official publication and to the rate of thermionic valve replacement on the ordinary television receiver, which contains an incomparably small number of valves, reliability is far away.

No doubt the "boffin" will speedily remedy faults, but the cost of employing such persons, if indeed this is possible, will by far exceed the cost of clerks.

Much good work has been done in the field of automatic computation, culminating in Press headlines referring to "Electronic Brains," "Memories," "Robots," etc. In my view,

the good work is likely to fall by the wayside if put into general service before the all-important factor — namely, reliability — can be assured. Furthermore, due to the varying characteristics of thermionic valves, even those of the same type and manufacture often make it necessary for major adjustments to be made after replacement of a faulty valve.

In your article you refer to electronics being much faster than electro-mechanical calculations, and in this respect I would explain that all equations ultimately revert to simple arithmetic, and I am able to produce an answer by means of electro-magnetic principles before an operator is physically able to set up the next problem.

Definite equations requiring precise answers cannot at the moment be solved with absolute reliability, but statistics in which 100 per cent accurate answers are not necessary are available through the medium of electronics.

Incidentally, I have attempted to keep abreast of electronics in the production field and on every occasion when I have attempted to use these principles I have quickly reverted to adopting electro-mechanical methods.

In my humble opinion, BUSINESS

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should reveal the true facts, and reference to the official document, obtainable from H.M. Stationery Office, price £1 1s. 0d., may be worth mentioning.

C. L. NORFOLK, B.Sc.,  
*Managing Director (Technical),  
Rentrax Commercial Counting  
& Control Ltd.,  
16 Grosvenor Place, London, S.W.1.*

(Mr. Spooner's article contained a section on "Reliability—and Accuracy" (November issue, page 153). He pointed out that American experience puts the figure for "down time" as 5 to 15 per cent. British electronic engineers with whom he talked were inclined to believe that this was a fair approximation —Ed.)

Mr. Bond-Williams, the "chain of communications" is normally a series of individuals, ascending in responsibility and authority. It is not difficult to see why information passing down the line should be less inhibited than information passing up it. Good "upwards" communications surely imply the existence, at each successive stage, of receptiveness without loss of authority. It would be interesting to know how many training schemes attempt to develop this far-from-simple combination of qualities at the intermediate stages of management.

A. G. BURBAGE,  
*Parliament Hill,  
London, N.W.3.*

### Office Exhibition for South Africa

there is an agency in Johannesburg, but not in, say, Durban or Cape Town.

Recently, whilst discussing office equipment with a local salesman, I said it was a pity that an Office Efficiency Exhibition was not held each year in South Africa, so that progressively-minded industrial executives could see the various systems under one roof and compare their merits side by side.

Before I came to South Africa, I regularly attended the annual Office Efficiency Exhibitions which were held at Olympia, and gained much useful knowledge of what was available to industry. I feel such an Exhibition is long overdue in South Africa, and in order that I can make enquiries, could you inform me who is the responsible body behind the London Exhibitions, in charge of the necessary organization?

Any information which you could give me in this connection would be greatly appreciated.

L. H. HUTCHINSON, A.C.I.S.,  
*Secretary,  
Fergusson's & Goodlass, Wall (Pty.)  
Ltd., Durban, South Africa.*

(Our correspondent has been put in touch with the Office Appliance and Business Equipment Trades Association, 94 Petty France, London, S.W.1.—Ed.)

### Communications

SIR,

The members of the BUSINESS "brains trust" on communications should be congratulated upon dealing with their subject more specifically than one might expect in an informal discussion of this kind. It is inevitable, however, that certain points should have been left "in the air." In the absence of some system such as that described by

SIR,

Being a subscriber to your excellent publication, I am always interested in the new types of office equipment as described in the advertisements. Unfortunately, it is not always possible to ascertain whether such equipment is available in South Africa unless one writes direct to the overseas manufacturer. Even then, one often finds that



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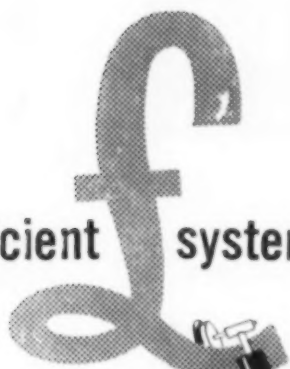
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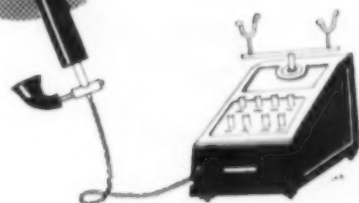
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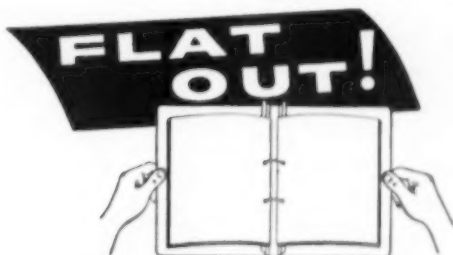
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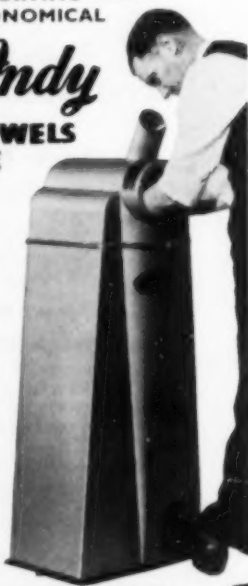
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**BUSINESS**





# Setting Up a Works Laundry

By DAVID R. WIRRAL.

**Faced by the need for providing their employees with clean and acid-free overalls, the National Smelting Company of Avonmouth decided to install their own laundry and repair unit. Besides improving the level of hygiene, this service has considerably lengthened the life of each garment, and so made a substantial saving over a period of years.**

**A** NEW trend in industry is for firms to run their own works laundries, and a good example of this can be found at the Avonmouth factory of the National Smelting Co. Ltd.

The company, whose chief products are heavy chemicals and metals, considers the standard of hygiene amongst its 1,800 workers to be a matter of primary importance. The cleaning of overalls, towels, boiler suits and other protective clothing has, in particular, received constant attention.

Before the present laundry came into operation, the works had a limited washing service which was restricted to the laundering of garments worn on jobs covered by the Factories Acts. The majority of employees took part in a scheme whereby they received two sets of overalls each year. One set was free and the other provided at half price. It was left to the individual to ensure that his clothes were uncontaminated by the acids encountered in

the heavy chemical industry and there were, inevitably, those whose standards did not match up with the level of safety desired by the management.

In addition, the firm were convinced that an internal laundry and repair service would prolong the life of each garment, and so effect a considerable saving in expenditure over a period of years.

Once the decision to set up a laundry had been taken, the works labour officer was made responsible for all arrangements concerning staff and equipment. His first step was to obtain some idea of how much equip-

ment would be needed—for, until this was done, the number of staff and size of premises required could not be finally settled. Visits were made to local laundry equipment firms, and a wide variety of machinery was viewed and inspected. Finally, the following pieces of equipment were chosen:—

- 2 washing and rinsing machines (capacities, 240 lb. and 80 lb. respectively).
- 1 hydro-extractor (which "squeezes" water from the washed and rinsed clothing by the centrifugal action of a perforated rotating chamber). The machine's capacity is 90 lb., and a skilled operator is required to pack the wet garments in the correct manner.
- 2 drying machines (known as "end-on tumblers"), each with a 45-lb. capacity.

A number of smaller electric machines were also purchased for mending and repairing—namely, 2 electric sewing machines, 2 electric darning machines and 1 marking machine.

Once the space required for the equipment had been established, arrangements were made for an extension to be added to the existing changing and bathing rooms, where there would be sufficient floor space for laundry, repair room and stores.

To ensure that clothing passes through the laundry at maximum speed, a knowledge of time-and-motion techniques was used in devising the layout. As the trolley containing the soiled and acid-contaminated garments enters the door, the clothes are taken from it and placed in the two washing machines. After washing, the water is changed and the garments rinsed. Approximately one-third are then packed into the hydro-extractor, while the remainder are placed back on the trolley. This is necessary because the capacity of the hydro-extractor is rather less than one-third of the total

*The day workers' changing room at Avonmouth. On the left, an employee is collecting his personal clothes from an attendant, while those on the right are enjoying a quick after-duty wash*



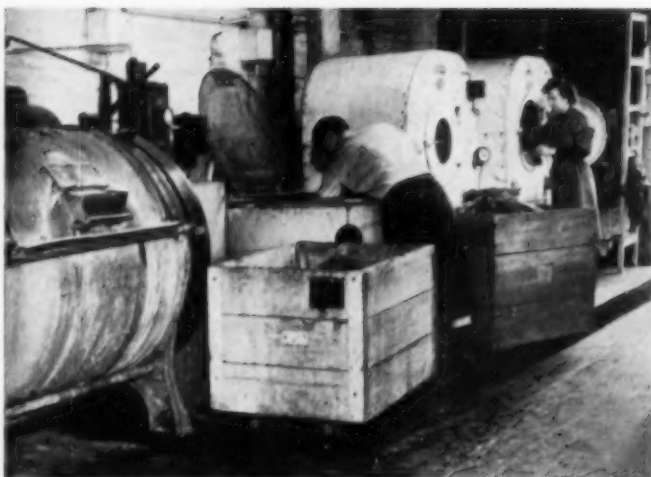
capacity of the two washing machines. However, the time required by the clothes in the extractor is also only about one-third, and so there is little chance of a bottleneck forming at this point.

The "end-on tumblers" complete the drying process, and clothes requiring repair are then weeded out from the pile by a female employee and are passed through to the repair room. Here they are divided into two groups, "torn" and "holed," the difference being that the former are darned, the latter patched.

Finally, the repaired clothes (and those not requiring repair) are stored on open shelving in an even-temperature store room, until needed again by the workers.

Members of the laundry staff were untrained when first taken on the payroll, with the exception of a fully-qualified laundryman, who directs the day-to-day operation of the laundry under the general supervision of the works labour officer.

As a supplement to this laundryman's instructions, a special chart has been compiled from a guidebook issued by the British Launderers' Research Association. This chart is hung



*Inside the laundry. The laundryman is packing the newly-washed and rinsed clothing in the hydro-extractor, which removes most of the dampness by centrifugal action*

up in the laundry for reference, and outlines, in straightforward 1-2-3 fashion, the procedure for washing, rinsing and drying the various types of clothing.

The layout of the changing and

washing rooms—considered to be on a par with the best in the chemical industry—is designed to deal with the many types of work performed, and with men whose starting and finishing



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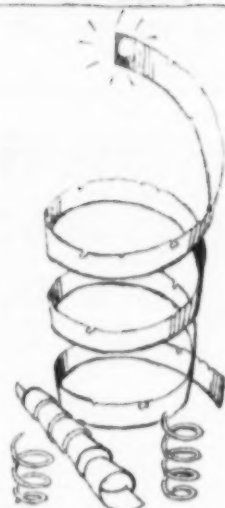


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times are also varied. There are two rooms, one for shift workers, the other for day workers. These are basically the same, but differ slightly in layout and equipment.

When a shift worker comes on duty, he passes through a small lobby where he clocks in, and goes straight through to the changing room. This is fitted out with rows of enclosed showers in the centre, and metal lockers on both sides. These lockers are sealed off from the main part of the room by glass partitioning, but at regular intervals there are small "hatches," through which the worker passes his personal clothing to an attendant, who places it in a locker marked with the man's number.

### Two-locker System

Meanwhile, the worker crosses to a hatch on the far side of the room and calls out his number. An attendant then removes the protective garments from another locker, similarly numbered, and hands them through.

When the shift worker comes off duty, the procedure is reversed. First, he removes his working overalls, hands them in to the attendant, and in return receives a clean towel. After a

shower, he goes across to the other side where, in return for the towel, he receives his own clothes.

Quite apart from permitting several hundred workers to change in the minimum of time, this two-locker system enables the changing room attendants to place freshly-laundered overalls in the baskets without interfering with any personal garments. (All protective clothes are, of course, clearly marked with the worker's locker number, so that they can be distributed at maximum speed).

The changing room provided for day employees differs from the shift workers' in that each man is provided with one locker instead of two. Also, as most day workers are engaged on less dirty work, the room is fitted with porcelain washing troughs and slipper baths instead of showers.

All told, there are some 20 attendants serving in the two rooms. When not engaged on issuing and receiving clothes, these men wash down the showers, baths, basins and floors, and are responsible for transporting soiled garments to and from the laundry on a hand trolley. A section of clothing in the lockers is changed each day, so that the flow of work through the laundry is fairly constant. On an

average, each garment is washed once a week.

Replacements for soiled clothing are usually placed in the lockers while the workers are off duty. It is a simple matter to pile the soiled clothes on the hand trolley, ready to be wheeled into the laundry the following morning.

### Work Handled

In addition to handling about 1,500 cotton overalls and 6,000 towels each week, the laundry washes some 250 lb. of white clothing, 150 woollen shirts and 12 woollen boiler suits—these being provided for the use of men who come into close contact with molten metal and the stronger acids. In order to cut down the number of garments ruined by the acid, the firm are also experimenting with suits made of *Terylene* and other new materials. Another recent innovation is a rubber boot sterilizing machine—one of the first of its type.

By providing a works laundry service and the other related facilities, the National Smelting Company is helping both itself and its employees—and, by its example, is lighting a path to improved hygiene and welfare for all firms.

*Some MEN don't seem to understand*  
the importance of the welfare side from  
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P.54

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FEBRUARY, 1955

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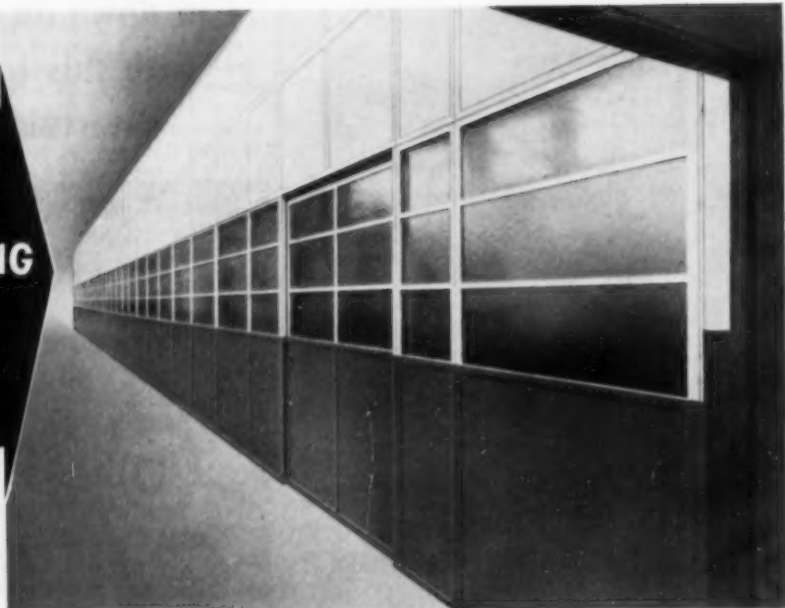
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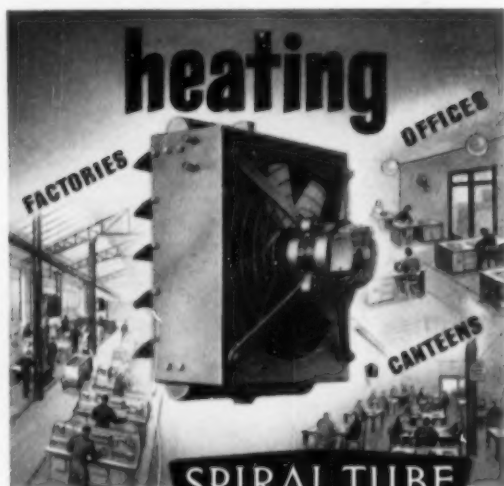
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**BUSINESS**

# Good Kitchen Utensils Save Food Waste

## Policy Column

### A Yardstick for Efficiency

By WINIFRED McCULLOUGH

*Senior Canteens Adviser, Industrial Welfare Society*

THE Industrial Welfare Society's fourth survey of canteen prices and subsidies is a yardstick by which all firms can measure the performance of their own canteens.

More than 300 firms gave full details of canteen income, expenditure and services. The information is classified by area and size of establishment, and each example bears an indication of the industry which it represents.

Compared with the previous survey, prices show a small but general increase—especially on main meals and tea.

Lowest prices are: main meal 5d., sweet 2d., tea free, meat sandwich 2d.

Highest prices are: main meal 2s. 6d., sweet 6d., tea 2½d., and meat sandwich 1s. 1½d.

Usual prices are: main meal 1s., sweet 4d., tea 1½d., and meat sandwich 8d.

Income from canteens shows a general—but not substantial—fall; expenditure on wages is practically the same as before.

The following table, showing costs as percentages of income, is of interest for comparison:

#### Area 1 (48 examples)

	Percentage of income
Food cost ... ..	86.45
Wage cost ... ..	48.97

#### Area 2 (28 examples)

Food cost ... ..	77.17
Wage cost ... ..	35.03

#### Area 3 (37 examples)

Food cost ... ..	77.32
Wage cost ... ..	43.14

On the whole, the examples in the survey are of very good canteens. They keep full records—and so many canteens do not. They know precisely where the money comes from and goes. Detailed records are the only salvation for any canteen which is costing the firm more than a reasonable amount of money.

This article—the last of a series—describes how long-term economies can be achieved by buying the right “tools” for the job. It also outlines the points which should be borne in mind when selecting miscellaneous items like slicers, peelers and tea-brewing equipment.

PREVIOUS articles have dealt with the big guns of canteen equipment.

Now comes the smaller artillery—cash registers, ticket machines, tea urns and all the spoons, ladles, knives, saucepans and dishes that go into a canteen kitchen.

It is difficult to deal separately with the smaller articles, but the panel on page 136 provides an invaluable checklist. Every six or 12 months stock should be taken of this equipment, and the tally brought up to strength.

The importance of having the right tools for the job cannot be over-emphasized. A cheap, dull or unsuitable knife may account for literally hundreds of pounds of wasted food during its period of use. A custard or gravy ladle of the wrong size may over-use a quart of material in a single meal-break. A bent or broken or rusted fish-slice may cost more than the price of replacement over and over again by the portions it breaks or mutilates.

Only the best is good enough for large-scale catering. Good metal of reasonably heavy gauge and with a “guaranteed” surface will stand up to fifty times the wear of an inferior article. The cheaper article may last well in the home, but in the constant hurly-burly of professional life it just cannot take it.

Scales are an important piece of equipment. Here again, minute inaccuracies can cost a great deal of money in a surprisingly short time. A rough,

dented, or rusty pan can result in spilled dry materials, or in appreciable weights of jam, syrup, etc. remaining stuck to the scale.

Really large canteens need several sets; platform scales for checking incoming sacks of flour, sugar, vegetables, etc., and smaller scales for the cook, storekeeper, confectioner, and still-room attendant. A precision scale for fine weighing is sometimes used for spices, etc. although most cooks measure these materials by spoonfuls rather than weight.

A scale of 20lb. capacity is suitable for most canteen kitchens and bakeries.

Every canteen serving 100 or more dinners needs a slicing machine for bread and a gravity-feed slicer for meat. It is not well enough known that boned joints, freshly roasted and allowed to “set” for (say) twenty minutes, can be economically and swiftly sliced by a gravity machine. The larger canteen where there is a big sale of rolls would do well to install a roll-cutting machine.

Potato-peelers are much of a muchness in design. Over 100 meals a day indicates the need for a power-driven machine. The machine should be fitted with a straight fall to the drain, and the peeled potatoes should be discharged directly into the sink.

The most usual fault in operating potato-peelers is to leave the vegetables in them for too long a period. Very careful instructions should be displayed near the machine. A chipper is needed,

too, hand-operated under 100 dinners, motor-driven for above.

The canteen that caters for approximately 500 dinners a day needs an apple-peeler and bean-slicer. There is also a fat-conserving machine that is a real money-saver.

Equipment for brewing, distributing and pouring tea is available in a bewildering variety. Most canteens today use multipots in one form or other. Where possible, stainless steel inside and out is by far the most attractive, desirable and hygienic material. Large openings and straight tap valves, to permit complete cleaning, are points to bear in mind.

Taps should be positioned so that they drain the urn completely. Handles should be strong and well-placed, and should provide an easy grip. The larger the tea infuser the more complete the infusion, an important point now that tea is so costly.

### Saves Time

The size of multipots ranges from one gallon to ten. The three-gallon urn is ideal for women attendants to lift and clean. The five is "possible," but larger sizes are unwieldy and can be dangerous.

Where tea is to be served in the customers' own mugs some form of milk dispenser saves the operatives' time, controls milk portions, and is less open to dust contamination than jugs or bottles of milk. A wall-mounted tea-dispenser will control the strength of the tea, and save time and wastage. Even the smallest canteen should install such a device.

Where a sizeable trade is done in confectionery (say 1,000 pieces daily) a hand-operated pie machine is a real labour-saver; it improves the appearance of pies and tarts, as well as controlling their size. For much larger numbers, the automatic version is indicated.

Ticket machines, change machines and cash registers are important. The question whether tickets or direct cash give the faster and more accurate results will lead to bitter arguments whenever caterers are gathered together. But where change and automatic ticket machines are installed, they should be placed where they will not be obstructed or cause obstruction; they must be serviced regularly, and filling and emptying be in the hands of one person only.

Where cash sales are preferred, a good cash register at every sales point is complete insurance against inaccuracy and minor dishonesty.

## To Cater for 100

### CROCKERY, Etc.

Condiment sets ... ..	18
Cups or mugs ... ..	200
Plates, meat ... ..	150
Plates, sweet ... ..	150
Plates, soup ... ..	100

### TABLE CUTLERY

Forks, medium... ..	120
Knives, " ... ..	120
Spoons, dessert (use also for soup) ... ..	240

### SUNDRIES

Baskets, frying, wire 9in. ...	1
Bins, refuse ... ..	3
Boards, carving, 18in. x 18in. x 2in ... ..	1
Boards, pastry, 24in. x 16in. ...	1
Boards, menu ... ..	1
Bowls, mixing (stainless or tinned steel), 15in. ...	5
Bowls, mixing, 12in. ...	—
Boxes, cutlery, 3-compartment	2
Brooms, bass head and handle	1
Brooms, hair head and handle	1
Brushes, pastry ... ..	1
Brushes, pot scouring ... ..	1
Brushes, scrubbing ... ..	3
Brushes, tap ... ..	6
Canisters, storage ... ..	6
Clocks, kitchen ... ..	1
Colanders, 16in. ... ..	1
Corkscrew ... ..	1
Cutters, pastry, plain (sets) ...	1
Dishes, pie, 12in. ... ..	6
Dredgers, flour ... ..	1
Dustpans ... ..	1
Forks, flesh ... ..	1
Forks, carving, with guard ...	1
Funnels, staybright or enamel ...	1
Funnels, pie ... ..	6
Graters, cooks' ... ..	1
Heads, mop and handle ... ..	1
Hooks, meat ... ..	6
Jugs, 2 pint ... ..	2
Jugs, 8 " ... ..	1
Kneelers ... ..	1
Knives:	
beef, carving, 14in. blades ...	1
boning, 6in. blades ...	1
bread saw ... ..	1
cook's, 6in. blades ...	1
" 8in. " ... ..	1
palette, 8in. blades ...	1
vegetable ... ..	3
Ladles, sauces, etc., 2½oz. ...	2
" soup, 8oz. ... ..	2
" sweets, 5oz. ... ..	2

### SUNDRIES (continued)

Machines, mincing (hand) ...	1
Mashers, potato (hand) ...	1
Measures, quadrated, 1 quart ...	1
Openers, can (hand) ...	1
Pails, enamel, 12in. ...	1
Pails, mop ... ..	2
Pails, galvanized, 12in. ...	2
Peelers, potato (hand) ...	2
Pins, rolling ... ..	1
Portioners, potato, 6oz. ...	1
Scales, 28lb., counter and weights ... ..	1
Scoops, veg., wire, long handle	1
Sheets, baking (to suit ovens) ...	3
Shovels, coke, lipped (for solid fuel) ... .. as required	
" wire gauze mesh ...	1
Sieves, wire, 14in. 1 16in. mesh	1
" hair, 12in. or 14in. ...	1
Slices, fish ... ..	1
Spoons, basting, 12in., tinned steel or staybright ...	2
" 16in., tinned steel or staybright ...	1
" wooden, 12in. ...	2
Steamers, 3-tier, 14in. ...	—
Steels, butcher's, 14in. ...	1
Strainers, conical, 8in. ...	1
Tins, American bake-pans (sizes to suit ovens) ...	2
" Yorkshire, 18in. x 10in.	2
" roll pudding, 15in. x 3½in.	6
Trays, butcher's, 16in. ...	6
" japanned, 18in. ...	2
" cake, cooling, wire, 18in x 12in. ...	4
Tubes, piping and bags ...	1
Whisks, wire, 12in. ...	1
" " 16in. ...	1
<b>COOKING UTENSILS</b>	
Kettles, fish, 24in. ...	1
Pans, frying, 14in. round ...	1
" " 10in. " ...	1
Pots, oval, boiling, 6 gal. ...	1
" " " 4 " ...	3
" " " 2 " ...	2
" round, 12 pint ...	1
" " 8 " ...	2
" " 4 " ...	3
Saucepans, double, 6 pint ...	3
Stockpots, with taps and strainers, 8 gallon ... ..	1
<b>STORES</b>	
Openers, case ... ..	1
Scoops for cereals ... ..	1
Wires, cheese ... ..	1

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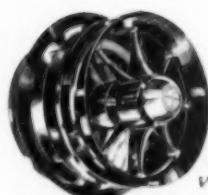
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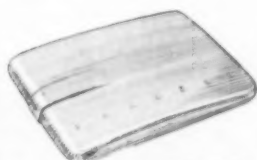
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# Business EQUIPMENT SURVEY SECTION

NEW AIDS TO GREATER OUTPUT AND LOWER COSTS

● Office . . 139 ● Industrial . . 144 ● Welfare . . 148 ● Canteen . . 148

## FOR YOUR OFFICE

### Versatile Book-keeper

A NEW low-priced book-keeping machine, the *Director P600*, incorporates a number of features which are usually associated with much more expensive equipment.

The 15in. front-feed carriage, tabulated and returned electrically, permits simultaneous entries on to several records—for example, ledger statement and journal or payroll, payslip and earning card. Other features include: a full month's dates on the keyboard; front-feed alignment of forms; transparent guides giving an unrestricted view of the entries; and a unit-construction stop and control bar which is easily changed by the operator, enabling the machine to undertake a variety of jobs.

There are also special keys which convert the *Director P600* into a multi-



Simultaneous entries

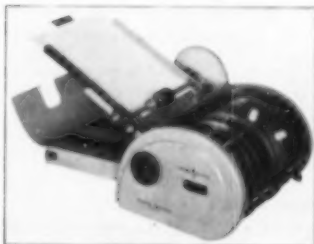
register adding machine, with hand or automatic selection of registers.

The machine is compact and can be used either on a desk or on a stand. If desired, it can be operated entirely by hand.

Enquiry Ref. No. O.2/1.

### Quick Folding Machines

THE *Foldopost*, which made its debut at the Manchester Business Efficiency Exhibition, will fold circulars, invoices, correspondence, etc. in eight different ways. Two folds are obtained in one operation, and sheets up to 8½in. by 14½in. can be double-folded at speeds of up to 5,000 an hour. The machine handles papers of various



Folds in eight ways

weights, including even sheets stapled together.

Of much the same size as a standard typewriter, the *Foldopost* is electrically driven and has an automatic feed. Its controls are simple, and any member of an office staff can learn to use it in a few minutes.

To obtain folds of the desired width, it is necessary only to move two knobs on a scale marked in inches. Once these are set, no other adjustments are needed unless the type of fold is changed—an operation which can be accomplished in a matter of seconds.

Enquiry Ref. No. O.2/2.

### Plastic Ruler

ALTHOUGH designed primarily as an accessory for the *Varityper*, a new plastic ruler is also suitable for general use.

It is calibrated in 16ths, 12ths and 10ths. At each end, there is a variable scale in units of 4 points.

Enquiry Ref. No. O.2/3.

### Loud-to-loud Telephones

A NEW loud-to-loud loudspeaking telephone system will operate satisfactorily even when the person using it is 20ft. from the desk-unit. Thus an executive can consult drawings and other documents in his office while

carrying on conversation with one or more parties.

Known as the *Telleloud*, the system works on any type of private automatic exchange (or branch exchange), central battery exchange, public telephone system, etc. Makers claim that they have overcome three snags generally associated with equipment of this type:

1—There is no speech-clipping when a pair of instruments are operating loud-to-loud and the conversation is rapid.

2—If one location has a higher-than-normal ambient noise level, the speech channel is not held indefinitely in its favour.

3—"Singing" or "ticking" is obviated by the inclusion in the amplifier of an electronic "hybrid" which adjusts itself to the prevailing line impedance conditions.

Working parties are designed so that they can be used in conjunction with the amplifiers of existing loudspeaking telephone systems. The amplifying



Compact desk-unit

section can be installed up to 100ft. from the desk console.

Inside the *Telleloud* desk-unit are fitted the microphone, loudspeaker, line key, "increase volume" key, and a signal lamp indicating that the amplifier is working and the instrument connected to line. Standard automatic dials can be provided if desired, together with direct-access or conference facility keys located in the plinth of the desk-unit.

The amplifier incorporates a device which enables the user to break-in on

★ Equipment included in this survey is selected for its news value alone. The names and addresses of the manufacturers or distributors of items mentioned can be obtained by writing to the Editor, quoting the appropriate reference number. Manufacturers are invited to submit details of new and interesting products for consideration. An original photograph should accompany each item submitted.

## Business EQUIPMENT SURVEY

an existing conversation merely by momentarily raising his voice. Normally the equipment is designed to operate from 200-250v. A.C. mains supply or, if specified, from 110-125v. supply.

Before leaving the factory, the equipment is adjusted so that it can be installed in the user's premises without further adjustment.

*Enquiry Ref. No. O.2/4.*

### Even Simpler Now

**M**OVIGRAPH wall-panels are now being made with "self return" flow-lines which increase the flexibility of this system and make it even more simple to operate.

Also available are flags and pegs with a perforated top, into which other symbols can be inserted, thus indicating changing phases of progress, etc.

*Enquiry Ref. No. O.2/5.*

### Two-way Contact

**A** SIMPLE "call and reply" telephone system gives immediate contact between an executive and his secretary. Time is saved, for example, when the executive wants a file or document; to attract his secretary's



Simple time-saver

attention, he has only to press a button.

The equipment consists of two telephones—desk or wall type—and a buzzer. Current for the buzzer is supplied by a small three-cell battery.

*Enquiry Ref. No. O.2/6.*

### Redesigned Ledger

**S**EVERAL improvements have been made in the *Post Haste* ledger—a system in which the ledger cards for machine accounting are held in stout loose-leaf covers by a side-punching device.

The binder itself has been stream-

lined and all moving parts are now enclosed. In addition, the operating tray which holds and opens the binders has been redesigned, improving its appearance and making it easier to operate.

An important point is that the lever action has been separated into two movements. No longer is there a danger that the use of undue pressure in opening an overloaded ledger will damage the mechanism. At the same time, the manufacturers warn users against cramming the binders with



No damage now from overloaded ledgers



## Where there's a phone — there's a Phonotas Girl.

Have your telephones cleaned and sterilised at a moderate cost by trained Phonotas Operators . . . a weekly visit by a uniformed girl, and your staff—and yourself—are guarded against any possibility of infection.

**DIRT IS DANGEROUS!** . . . and sterilisation alone is NOT enough! . . . your phones must first of all be thoroughly cleaned, and **THEN** sterilised.

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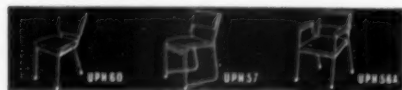


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GM/HTE 2352

## Business EQUIPMENT SURVEY

sheets, since the smooth operation of the system is thus impaired.

Enquiry Ref. No. O2/7.

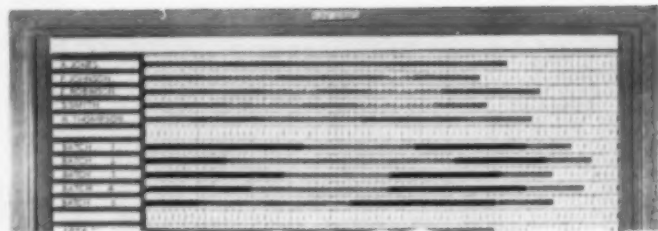
### Destroys—and Saves Cash

**C**ONFIDENTIAL documents can be completely destroyed by using a new machine known as the *Shredway*. An alternative use is for the conversion of all sorts of waste paper into packing material, thus saving the money spent on straw, wood-wool, etc.

The machine is compact and can be used with safety even by juniors. Power



Rapid destruction



Signals are "built-in" on this chart (part only shown)

is supplied by a  $\frac{1}{4}$  h.p. electric motor.

Weighing only 50lb., the *Shredway* measures 15in. by 12 $\frac{1}{2}$ in. by 9in.

Enquiry Ref. No. O.2/8.

### "Built-in" Signals

**I**MPORTANT feature of the new *Unigraph* wall-chart is that it has no loose tabs, cards or other units: the signals are "built-in" and can be adjusted instantaneously with one finger.

The chart consists of rows of plastic discs, each of which is divided into five segments: black, white, yellow, green and red. These discs are rotated between engraved scales to form either lines or single points of colour. Since a disc can also be set in any one of five colour combinations (black/yellow, for

example), there is actually a choice of ten codes for each signal position.

Scales are of white plastic. Each space has a small hole which, if desired, will hold a coloured plastic plug for additional coding.

The frame and index holders are of aluminium, finished in dove-grey. The general effect of the chart is of brilliant coloured lines on a white background. Overall dimensions are 37in. wide by 26in. high. The unit projects from the wall by 1 $\frac{1}{2}$ in.

Three models are available, giving the following combinations: 25 lines of 72 discs; 50 lines of 24 discs, arranged in two columns; and 75 lines of 24 discs, arranged in three columns.

Enquiry Ref. No. O.2/9.

# WHY IS EVERYONE TALKING ABOUT DICTATING MACHINES?

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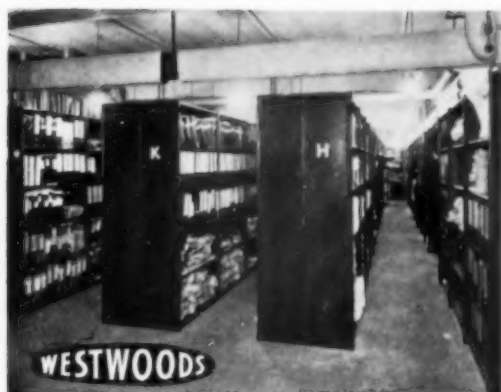
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*A study of the careers of more than  
a thousand public company directors*

by

G. H. COPEMAN, Ph.D.

How many of the directors of large British companies are accountants, lawyers, engineers, scientists? How often during their careers did they change their jobs? What sort of education did they have? What proportion started work in a small firm; what proportion in a large firm? At what age did they receive their first board appointments? How many are the sons of business men, professional men, etc?

Answers are given to these and other questions in the first major study of the careers of directors of large British companies. This book should prove of interest and value to those who have already achieved the responsibilities of leadership. But it should be of even greater value to the younger executives who aspire to leadership, and who wish for guidance from a broad picture of their present directors. Academic readers should also find the book a useful starting point for further studies of leadership.

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FEBRUARY, 1955

## NEW WAGES CONTROL METHOD

**Saves Time and Clerical Labour—  
With Increased Accuracy**

A new simple method has been evolved in conjunction with Accountants and Personnel Officers for the quick and efficient entering and checking of wages, combined with the personal information of the worker.

The pay envelope slip, pay-roll, tax details and personal record are completed **AT ONLY ONE WRITING**, reducing errors by 66-2/3% and enabling one clerk to save 40 minutes in every hour spent on wages. A quick cross check of column totals proves the figures and the perforated pay-slip is ready for use with the wages, with the *same* accurate figures permanently recorded on the personal record, ready for posting to the Nominal ledger.

And all without complicated mechanisms.

Not only have you a time and labour saving method of dealing with wages but it is combined with a visible personnel record. Important information such as staff away sick, entries to pension scheme, etc., can all be pin-pointed. And there are standard forms specially prepared for Engineers, Local Government, Builders, etc. Special forms can be designed if required.

A strong slim binder houses up to 800 personnel records with ever-visible edges giving name, department and personal details. The time saved in thumbing through book leaves more than justifies its use. And the personal record is permanently visible and permanently held, with a simple lever action enabling insertion or extraction of records in correct alphabetical order.

Hundreds of records, complete with wages control, can be handled by one clerk in a straightforward system housed in slim loose leaf binders which slide into use in a second.

Just write "Shannoleaf for Wages" on your letter-heading and full details will be sent by return.

**SPECIAL NOTE:** If you require special detailed information in a portable visible form regarding Pension Schemes, please add "Pensions" on your letterheading and details of these special records will be sent also.

**Shannon Systems**

**VISIBLY BETTER RECORDS**

**The Shannon Ltd.**

**102 Shannon Corner - New Malden - Surrey**



## INDUSTRIAL EQUIPMENT

### PORTABLE POWER TOOLS

#### Versatile Grinder

THE new *Atlas LSS-81* grinder has been developed to take full advantage of the new reinforced grinding wheels which are now available. It is light in weight with a high power output, which enables it to use the maximum cutting ability of the reinforced



High power-to-weight ratio

wheels. This combination of features enables the unit to do work which has, in the past, been restricted to more expensive machine tools.

The tool can undertake other work besides grinding. It may be used in foundries for notching and cutting off risers in all metals, or for the general finishing of castings. Other uses include dressing down heavy welds and bevelling plates, etc. One notable feature is its high power-to-weight ratio—2½ h.p. to 11lb.

*Enquiry Ref. No. F.2/1.*

#### Stud Welder

NO special studs are necessary with a new stud-welding cartridge and gun. The gun is adjusted to the length of the studs to be used by a coarse adjustment. The stud is then clamped

into the stud-holder by spring pressure. Fine adjustment may be effected so that the stud protrudes 0.2-0.5mm. from the plane of the tips of the support. A welding cartridge, designed upon the "contact" electrode principle, is then pushed on to the stud and the gun is placed on the workpiece.

As the gun is pressed on to the plate, the stud-holder is pushed upwards and a spring is compressed. The current is switched on by a microswitch in the handle of the gun and the arc is ignited. After that part of the cartridge upon which the stud rests has been fused away, the stud is pressed upon the workpiece by the spring. When the weld has been completed, the switch is released and the short-circuiting current is switched off. Welding can be carried out in both the vertical and overhead positions.

An important feature of the new system is that A.C. current may be used, thus permitting the use of ordinary welding transformers. Stud-welding cartridges are available in ½-, ⅜-, ⅙- and ¼-in. diameters.

*Enquiry Ref. No. F.2/2.*

### MACHINE TOOLS

#### For Light Milling

THE new *Jag* slot milling machine is designed primarily for the light milling operations employed in the production of electrical instruments, meters, scientific equipment, and small precision parts generally.

The headstock which encloses the three-speed vee-belt and final gear drive is of cast iron. The solid or No. 1 Morse taper hollow spindle and pivot shaft are mounted on adjustable ballbearings in cast-iron housings attached to the headstock. A No. 1 Morse taper or stub-type cutter arbor



Three spindle speeds

with spacer collars is supplied with the machine.

The workholder has two stations, one in the form of a machine vice, the other arranged to hold collets. Special jigs can be supplied. The unit is supplied complete with swarf chute and chip tray and a totally-enclosed surface-cooled electric motor. If required, a combined stand and accessory cabinet, coolant pump, and reverse starter can be fitted as extras. Three spindle speeds (87, 180 and 320 r.p.m.) are standard, but higher speeds are available. The machine can be used either for plunge-cut or traverse milling operations, the lever-operated workholder having a lateral adjustment of ⅝ in. and a cross-feed of 4⅛ in. Overall dimensions of the machine are 11 in. by 7⅛ in. by 18 in. high, and weight is approximately 88lb.

*Enquiry Ref. No. F.2/3.*

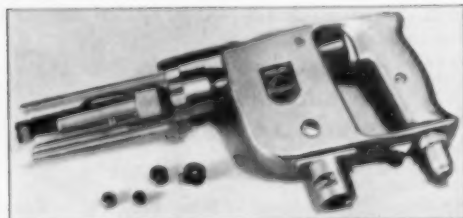
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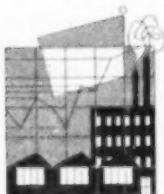


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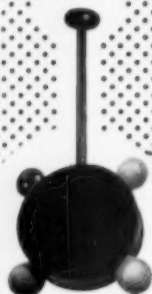
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## Business EQUIPMENT SURVEY

contact is made according to the direction of the controlling current. The coil has two independent windings which can be wired singly, in series, in parallel or in differential according to the application. The design is compact, the overall measurements being 1½ in. by ½ in. by ½ in.

The contacts are platinum and may be employed to control a non-inductive load providing that the A.C. or D.C. valves do not exceed 50 volts: 100 milliamps: 2 watts. The relay is supplied in two models, with coils having a resistance of 100 ohms and 350 ohms respectively.

The sensitivity of the relay permits close temperature control when used with a resistance thermometer in a bridge circuit. Similarly, such applications as self balancing bridges will give close control without the use of an additional electronic amplifier.

*Enquiry Ref. No. F.2/4.*

### INSTRUMENTS

#### New Quadrant Meter

THE manufacturers claim that their new Pullin 7 in. quadrant meter is ideal for use where a long-scale instrument is required on equipment having very limited interior space. It occupies the same space behind a panel as a conventional meter with a 2 in. scale



For limited space

but, with a front projection of less than one inch, it gives a 7 in. scale. The movement gives a linear scale over a 90 deg. arc. It is fitted with a spear-shaped pointer and is totally enclosed in an aluminium case. The dial, available in various colours, is made of a translucent material and is unbacked. This, together with the movement positioned in one corner of the dial, facilitates illumination from the back of the instrument.

The quadrant meter is available as a milliammeter or ammeter with any range from one milliamp upwards, or as a voltmeter. It can be supplied with

a moving coil movement for D.C. circuits or a rectifier can be incorporated for use on A.C.

*Enquiry Ref. No. F.2/5.*

### GENERAL

#### Sweep-up Barrow

THE Clean-Aid industrial sweep-up barrow is low loading and designed for easy and speedy collection of refuse, ashes, swarf, sweeping powders, leaves, factory waste, etc. It is claimed that stooping, shovelling and lifting are obviated, the refuse being swept straight from the floor into the barrow.

A feature of this new barrow is that the leading edge is reinforced by a ½ in.



No stooping

by ½ in. welded steel strip. In addition, the nose consists of a ½ in. diameter round rod of hard steel which is welded for the full width of the barrow.

The body is 27 in. wide by 36 in. long, and the capacity is 2 cwt. Two 14 in. by 2 in. rubber-tyred steel wheels on 1 in. diameter axles are fitted. The overall weight of the unit is 75 lb.

*Enquiry Ref. No. F.2/6.*

#### Mobile Bench

A FEATURE desirable in a mobile bench is some method of "retracting" the wheels when the bench is in use on the shop floor. Simply "chocking" the wheels often leaves the bench free to move.

With the Bedford mobile bench, the wheels can be raised, allowing the legs to rest on the ground. Conversely, when the bench is to be moved, the wheels are lowered and the legs raised clear of the ground. The operations are carried out by a simple movement necessitating only a slight lifting of one end of the bench by the tubular handle provided. This action allows the axle to move into the appropriate slot in the axle plates. Each end of the bench



Retractable undercarriage

is clearly marked, one end for raising the wheels, the other for lowering them.

Standard benches are 48 in. long by 27 in. wide by 34 in. working height and are fitted with a ½ in. thick mild steel top, and framework of 2 in. by 2 in. ¼ in. angle. Benches are also available with a tool drawer (as illustrated) or tool cupboard. The tool drawer is fitted with an interior tray sliding on angle runners. The tool cupboard has one internal shelf and is mounted on the horizontal cross-rails.

All benches are of bolted construction and consist of five parts. They are supplied "knocked down" for erection by the customer. It is claimed that this can be done in a few minutes, the only tool required being a spanner.

*Enquiry Ref. No. F.2/7.*

#### Clip-on Cable-cleat

CLAIMED to be of great use for wiring installations of many kinds is the El-cleat, a new form of light wiring cable-cleat. Moulded in plastic, the cleat consists of two parts which clip together. One part, the base, is



Neat and practical

arranged for single-screw fixing. The cable is laid on this base, and the second part is clipped over and held by means of teeth which give a positive interlock and grip on the cable. To release the grip, the top half of the cleat is slid along the cable, a stop ensuring that this can only be effected in one direction. The cleat is available in four colours, red, yellow, blue and green, in addition to plain and transparent.

*Enquiry Ref. No. F.2/8.*

## Business EQUIPMENT SURVEY

### CANTEEN EQUIPMENT

#### Infra-red Cooking

**I**NCLUDED in a range of new infra-red cooking appliances are grills, waffle irons and grill boxes. The distributors claim that with these a wide variety of foodstuffs can be grilled within 30 seconds to 3 minutes, with economy in space and fuel.

The rectangular grill with adjustable height has a cooking surface of approximately 48 sq. in., while a circular grill can be used for steaks or fish, waffles or pancakes. The infra-red grill box (barbecue) has a manually-operated spit, and can cook a joint in about 35 minutes. The grills are finished in polished nickel plate with heat resisting handles.

Enquiry Ref. No. C.2/1.

### WELFARE EQUIPMENT

#### Lather Dispenser

**A** DISPENSER is now available which distributes liquid soap in the form of lather. A feature is the new "tamperproof" valve. Operated by

one hand, this valve releases an adequate quantity of lather at each depression of the plunger but, the manufac-



"Tamperproof" valve

turers claim, avoids the waste which occurs through liquid soap over-spilling the palm. The valve is made from stainless steel and has a projection of 4½ in.

Enquiry Ref. No. W.2/1.

#### Window Platform

**T**HE Pillar window platform is claimed to provide greater safety for window-cleaners, painters, etc.

The platform stands on two small

legs which rest on the outside sill. A support bar connecting the two main members, or under-supports, extends horizontally beyond the inside of the window frame, thus locking the platform securely from the inside. It is claimed that the platform cannot slide or slip sideways, while a waist-high guard rail and supplementary members form a protective cage.

Steel legs, which rest on the outside sill, are adjustable to different widths of sill, and are covered with heavy fibre to avoid the marring of wooden sills. The floor, measuring 22 in. wide by 36 in. deep, is constructed of straight-grained timber. The unit is fully collapsible and weighs 32 lb. Overall dimensions, when collapsed, are 8 by 22 by 36 in.

Enquiry Ref. No. W.2/2.

#### New Deodoriser

**T**HE Swiss deodoriser has been designed for fitting under the rim of w.c. pans. It incorporates a wedge-shaped stainless steel clip and a plastic box for holding the deodorant block. The block includes a solvent to remove stains, a disinfectant and a fragrant deodorant.

Enquiry Ref. No. W.2/3.

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BUSINESS

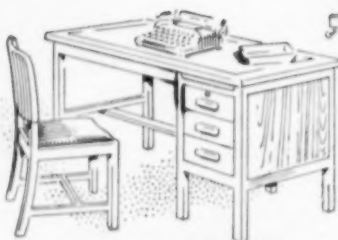
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*Watchmen  
are important  
people*



Every well-run country in the world employs policemen. Every efficient army knows that alert sentries are a vital precaution. Government Departments regard it as essential to employ Watchmen equipped with Watchmen's Clocks to guard their property. Nearly all large industrial concerns and vast numbers of small businesses equip their Watchmen with Watchmen's Clocks - because they know from experience that it pays to do so.

It is not enough, however, to hire a watchman and then leave him to his own devices. In large numbers of cases premises are entered despite the fact that a watchman was on duty.



## WATCHMEN ARE IMPORTANT PEOPLE

In this connection

The BLICK WATCHMEN'S CONTROL SYSTEM serves three very important purposes:

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2. It enables you to find out whether you have a good man you can trust - one who will do his job provided he knows someone is checking on him or one who is indolent and no good to you.
3. But the Blick System goes further than that. There are instructions issued with it that enable you to brief your watchman in such a way that it is extremely unlikely burglars will ever attempt to break into your premises. And the records the System gives you enable you to check at a glance that your instructions have been correctly carried out.

In return for three minutes work a day your supervisor will have complete control of the situation and you will make your premises virtually immune from burglary and far safer from fire.

That is why the Blick System is used by so many of the largest organisations in the country and also by thousands of smaller firms employing a single watchman only.

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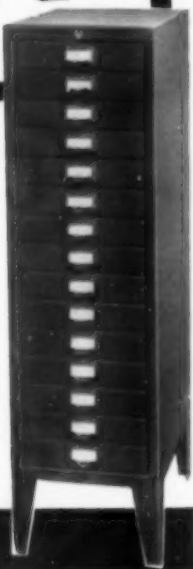
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## HOW MANAGERS ARE TRAINED

*Continued from page 82*

lectures on the specific system of accounts used by the company. It is broadly true that what the trainee has learnt previously at university is somewhat general in nature and a little behind current practice. One of the aims of the final 15 months of special coaching is to bring the trainee up to date on current practice.

### Case History 3

**P**AIN-T-MAKING today is a highly technical business. Because of the need for a scientific approach to modern paint manufacture, Jensen and Nicholson Ltd. of Stratford, London, have instituted a comprehensive and intensive course for their management trainees—known as "staff cadets."

The company, of course, employ highly qualified chemists, but they also want to ensure that their general management trainees not only understand the various phases of marketing and office procedure, but also have a good knowledge of the raw materials and pigments which are used in the production of high grade paint finishes,

and of the various manufacturing processes involved. They must also know something of the widespread uses of both decorative and industrial finishes.

The majority of cadets are recruited immediately after their National Service, and the company prefer to accept boys of good education—of matriculation or higher standard—who possess both a good personality and physical fitness. The latter is important owing to the likelihood of a cadet spending at least a part of his career abroad in one or other of the company's factories or subsidiaries in South Africa, Portugal, India, Australia, the Argentine, the Middle East and Pakistan. The company's selection board takes particular note of the applicant's general knowledge, demeanour and domestic background, and any noteworthy achievement in the field of sport or in the Services.

After being passed by the board, the cadet is usually assigned to the Stratford factory where for 2½ years he receives practical instruction in every phase of paint manufacture. During this time he dons overalls and works normal factory hours like any other employee. The cadet's progress through the various stages of production is carefully

scheduled. His first five months in the factory are spent in the varnish department, where he works his way through the seven sections into which the department is divided. The time to be spent in each section has been worked out by the personnel department and varies in character from a period of humping sacks of gum to initiation into the working of synthetic resin plants.

He subsequently spends a full year in various other production departments—enamel, paint, cellulose, inspection and production control. In each of these, he works under the direct supervision of a foreman, and is instructed in every type of job from bench worker to chargehand.

Once his tour of the factory has been completed, the cadet starts *again* in the varnish department. On this second time round, however, he studies the work from the management end, acting as personal assistant to the manager of each department in turn, for periods which range from three to eight weeks. For the last 13 weeks of his training in production he serves as an assistant to the works manager.

The last half of his training covers the administrative and selling sides of the organization. The cadet begins

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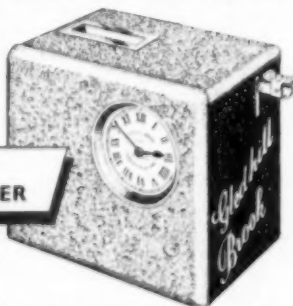


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with a month in the accounts department, studying sales analysis and the preparation of home and export accounts, etc. This is followed by two weeks in the cost department. Experience as a counter and warehouse hand is provided through one of the firm's subsidiary retailing companies.

Then comes instruction in actual sales and servicing methods. He accompanies one of the industrial sales division's servicing units on their visits to customers, whilst further time is spent on the road with others of the firm's decorative division representatives. To gain greater insight into the selling organization behind this outside representation, the cadet subsequently spends some six months in the sales, distribution and advertising departments, in the capacity of personal assistant to the managers of these offices. Five weeks in the export department and four weeks in the purchasing department complete the picture.

During the last weeks of his training, he is given instruction on legal matters, leases, taxes, patents, etc. and is finally despatched to a one-week management practice course arranged by the British Institute of Management. Last year the course was held at Wadham College, Oxford.

Towards the end of the training curriculum, the company take great pains to see that each individual cadet is engaged, as far as possible, in that particular type of work in which he is likely to excel.

## Case History 4

**D**URING the latter part of the war, it became evident to the directors of Crompton Parkinson Ltd., the manufacturing electrical engineers, that definite steps would have to be taken to ensure that men of "management calibre" would be available to deal with the many problems which the advent of peace was bound to bring. As it was then too early to forecast just what these problems would be, the firm decided that training for management would necessarily have to include aspects of every activity within the organization if the future management of the company was to be capable of dealing with all eventualities. As this would mean a training course of exceptional length, two separate schemes have been established—one covering manufacturing and the other sales promotion.

For the works management training

scheme, young men of graduate standing, and with a few years' experience in the field of production, are accepted for courses of instruction which, on an average, cover one to two years. There is no set curriculum, as the company realize that no two trainees start off with precisely the same degree of knowledge and experience.

The first phase of training is spent in mastering, in a very broad way, the various techniques of production engineering. To achieve this, the trainee spends some time in each of the separate departments directly concerned with manufacture. This is followed by a period in which he helps to undertake control of labour in a production department, and carries out investigations into specific production problems.

To provide the trainee with an understanding of administrative problems, he is assigned for short periods to departments not directly concerned with production, such as the personnel, purchase, costing and sales sections. He may also attend an external training college, such as the course at Ashridge College or at Wadham College summer school.

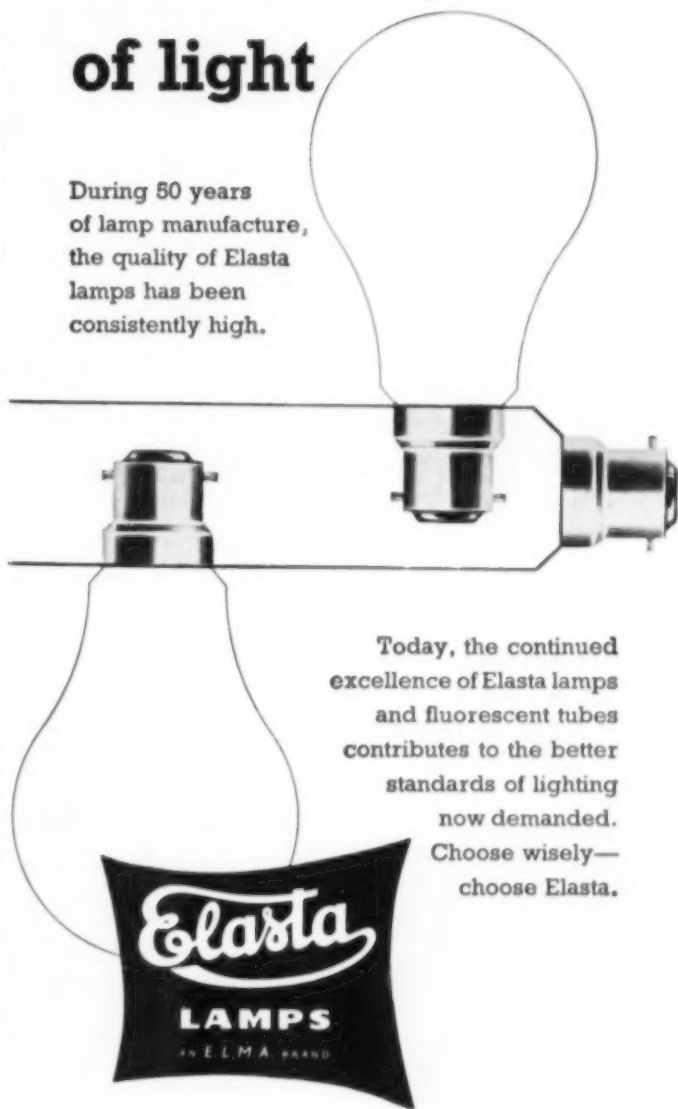
This fairly elastic syllabus of instruction, the company have found, enables them to form, within a year or so, a definite opinion regarding the capabilities of each trainee and it is this, together with the preferences expressed by the trainee himself, which will decide the course of his future—and more specialized—training.

In most cases, this takes the form of "understudying" a particular executive—usually one who is nearing the age of retirement, and whom the trainee may then replace. Understudying an executive does not imply *automatic* succession, however. It may, in fact, lead the trainee to an even higher post within the organization if he shows, during this period, that his abilities are worthy of it.

Similar methods are used for developing potential sales managers. These young men usually possess a university degree, and are selected from the company's sales organization. Their special training consists largely of experience in helping to sell products other than the ones to which they have already been accustomed, and like production trainees, they are given the opportunity of acquiring additional experience in the main administrative and servicing departments. They also undertake a brief "tour" of the works, so that they complete their training with a basic technical understanding of the products they are helping to sell.

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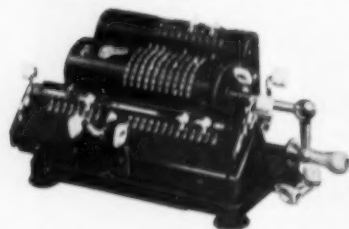
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## EMPLOYEE SHAREHOLDING

Continued from page 102

employees have voting and dividend rights so long as they remain employees (and after they retire), but not if they go to another firm.

As there is a fairly large turnover of labour in industry today, there is something to be said for devising a scheme by which employees have normal voting and dividend rights as shareholders, and can take their shares with them when they leave the company, then becoming small outside shareholders. Because of the turnover of labour, it is unlikely that under such a scheme, employees would ever gain an overwhelming shareholding control. The I.C.I. scheme has the advantage that the employees will become full shareholders, with voting rights, and can take the shares with them when they leave.

In discussing what would be the ideal type of scheme for general application in British industry, a crucial question is taxation. In the Standard Oil scheme, the company make their contribution free of tax, but the employee subsequently has to pay tax on the money contributed by the company. In Britain, the scheme run by Imperial Chemical Industries Ltd. is in a similar tax position. The company make their profit-sharing contribution tax-free, but the employee has to pay tax.

### Which Rate?

In the Birfield Industries scheme, described in Case History 5 (January), the company pay tax on the notional reserve which is built up against each Employee Preference share, so that it may later be converted into an Ordinary share. The employee then has no tax liability. However, as employees on the whole pay less than the standard rate of tax, and the company pay the standard rate plus profits tax, this is not exactly a cheap way of providing an employee shareholding scheme.

If the Chancellor of the Exchequer wished to fulfill the government's aim of encouraging employee shareholding schemes, one possible line of attack might be to consider granting a concession similar to that already granted to building societies. A society does not deduct the standard rate of income tax from its shareholders' dividends. The average rate of tax paid by building society shareholders is less than the standard rate, and as a concession, building societies are allowed to deduct an agreed rate of tax which is consider-

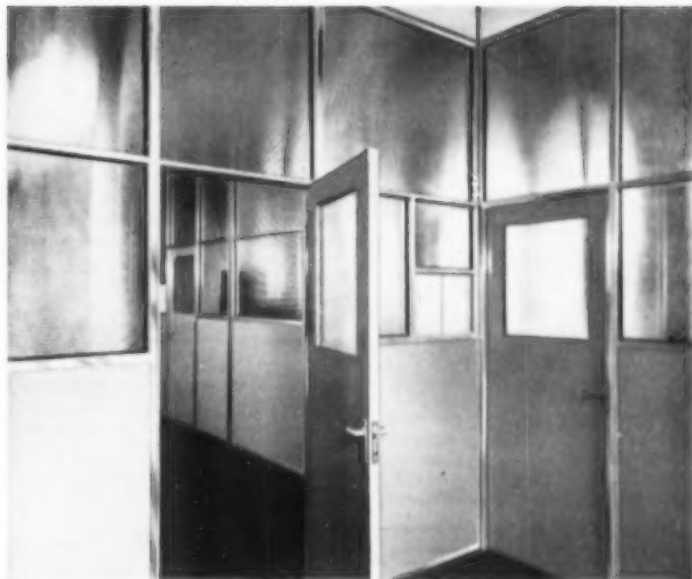
ably below the standard rate. After that, their dividends are classed as tax-free.

The Chancellor of the Exchequer could well consider a similar provision by which companies running employee shareholding schemes were allowed to deduct an average rate of tax from the money allocated to the scheme, the balance then being considered as free from further taxes, both in the hands of the company and the employee. However, in order to prevent such a concession from becoming a means by which employees received a special type of cash bonus at a lower rate of tax, the Chancellor would need to place an embargo on the re-sale of employee shares within a specified period after issue—say five years.

To sum up, the I.C.I. employee shareholding scheme seems to be about as good as any so far devised for general application in industry. The employee is not obliged to buy something which he would not normally buy. He is given the shares as part of a profit-sharing scheme, and he becomes a normal shareholder in every sense. He does not lose his voting rights, as in some schemes, and on the other hand he does not gain any specially-geared dividend rights.

However, if such a scheme were applied generally in industry, there would need to be a restriction on the immediate re-sale of the shares, otherwise, in the case of public companies, the scheme would have a depressing effect on share values. In private companies, where the sales of shares would have to be approved by the board in any case, this depressing effect would not apply. But an embargo for say five years would still be necessary to protect the Inland Revenue against deliberate tax-avoidance schemes. Some private companies might have good reasons for insisting that employees who left the company sold their shares, and it would be fair to allow this to be done, even within the five-year period. But to protect the employee, the sale would need to be subject to a minimum share valuation of say seven years' purchase of the average dividend during the last three years.

There seem to be no important reasons why employee shareholding should not become fairly widespread, provided that boards of directors really believe in it as a means of promoting better industrial relations. Although, as already indicated, the Inland Revenue could do more to encourage it, the case histories presented here show that effective schemes can be and have already been devised.



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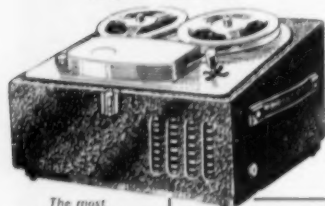
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## HE MADE PIONEERING HIS POLICY *Continued from page 91*

fitted with a power-operated turret. But that turret carried only one gun.

Some two years earlier, Mr. North had gone to Paris to examine a French turret. He was so impressed that he secured an option on the spot—24 hours ahead of the representative of one of the British "giants." That design, combined with some of his own inventions, became the four-gun turret of the *Defiant* fighter.

More important, it convinced the Air Ministry that Boulton Paul once more had established a technical lead in a field which could not be ignored. During practically the whole of the second world war, the firm was asked to concentrate its design work solely upon armament. Its turrets were standard equipment on a number of British and American machines—among them, the *Halifax* and the *Liberator*.

### Post-war Work

Mr. North's broad conception of aircraft development had proved itself in the practice of a quarter of a century. It can still be seen in the firm's post-war activities. The tiny delta-wing aircraft which was displayed at Farnborough last year embodies some results of the company's latest revealed line of specialist research—power-operated controls. This was another example of a demand recognized ahead of its time, with the result that today most of Britain's heavy bombers are fitted with powered controls designed by Boulton Paul.

Mr. North is essentially an example of a man who has matured side-by-side with an industry—and with its associated sciences. Yet he has never (even during his apprenticeship) attended a technical class—and never used a notebook. His education has grown Topsy-fashion "while I was doing the job."

But what he has missed in formal study, he has made up for in original thought. He believes that "if you have a proper organization, the final purpose of management is thinking." Mr. North's own speciality is thinking about "the things other people in the same line of business would not ordinarily do." For a mind of such astonishing flexibility as his, that could cover a lot of ground (at the moment, it includes a mathematical study of human control factors). But one thing seems tolerably certain. The thinking that Mr. North is doing today is likely to have some practical bearing in the aircraft industry the day after tomorrow.

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